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**“Agrarwende”:  
Cognitive-normative approaches to policy change in  
German agro-biotechnology.**

by

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## Abstract

***“Agrarwende: Cognitive-normative approaches to policy change in German agro-biotechnology.***

In the year 2000, Germany's biggest post-war food crisis, BSE, changed the terms of the public debate on agro-biotech significantly. Before the BSE-crisis, Germany's policy had been predominantly driven by a neo-liberal framing of biotechnology as a central tool for innovation and international competitiveness. After BSE, biotechnology policy became caught up in a broader reform effort to change agricultural and food policies – the *“Agrarwende”*. This thesis concerns the question of the policy shift in agricultural biotechnology as it developed in Germany between the years 2000 and 2004 as a result of the *Agrarwende*. It analyzes why the BSE crisis had an effect on the German agro-biotech subsystem, how it affected regulation and to what extent it led to the institutionalization of new types of socio-political practices and relationships. To fulfill this purpose the thesis uses cognitive-normative frameworks, in particular Maarten Hajer's discourse analytical framework and Paul Sabatier's advocacy coalition framework. By looking at the German case of agro-biotech regulation the thesis asks, how can policy change be explained and illuminated by the use of these two theories? What are their relative or different contributions to the study of policy change? Are these approaches contradictory or complementary? It can be concluded that, over the years, a great deal has changed in German agricultural biotechnology policy with regard to legislation, the political institutions and the actors involved in the subsystem. The cognitive normative frameworks applied both contributed to a better understanding of the policy process and policy change. In the analysis, Hajer's concepts were found to have more strengths and fewer weaknesses than Sabatier's. Being rooted in different theory traditions, the two approaches showed contradictory as well as complementary features. There was, in any case, much to be gained from looking at the interaction between discourse and belief dynamics.

*Für meine Eltern, Helga und Franz Boschert*  
*To my parents.*

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## List of abbreviations

AGÖL	Arbeitsgemeinschaft ökologischer Landbau <i>Organic Farming Association</i>
BBA	Biologische Bundesanstalt für Land- und Forstwirtschaft <i>Federal Biological Research Centre for Agriculture and Forestry</i>
BfN	Bundesamt für Naturschutz <i>Federal Agency for Nature Conservation</i>
BfR	Bundesinstitut für Risikobewertung <i>Federal Institute for Risk Assessment</i>
BgVV	Bundesinstitut für Gesundheitlichen Verbraucherschutz und Veterinärmedizin <i>Food Safety Agency</i>
BLL	Bund für Lebensmittelrecht und Lebensmittelkunde <i>German Federation for Food Law and Food Science</i>
BMBF	Bundesministerium für Bildung und Forschung <i>Federal Ministry for Education and Research</i>
BMGS	Bundesministerium für Gesundheit und Soziales <i>Ministry of Health</i>
BMU	Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit <i>Federal Ministry for the Environment, Nature Conservation and Nuclear Safety</i>
BMVEL	Bundesministerium für Verbraucherschutz, Ernährung und Landwirtschaft <i>Federal Ministry for Consumer Protection, Food and Agriculture</i>
BMWi	Bundesministerium für Wirtschaft und Technology <i>Federal Ministry of Economics and Technology</i>
BÖLW	Bundesverband ökologischer Lebensmittelwirtschaft <i>Organic Farming and Processing Association</i>
BUND	Bund für Umwelt- und Naturschutz <i>Friends of the Earth, Germany</i>
BE	Bundesverband der deutschen Ernährungsindustrie <i>National Association for the German Food Industry</i>
BVL	Bundesinstitut für Verbraucherschutz und Lebensmittelsicherheit <i>Federal Agency for Consumer Protection and Food Safety</i>
BVL	Bundesverband des deutschen Lebensmittelhandels <i>National Association of the German Retail Industry</i>
DAF	Dachverband wissenschaftlicher Gesellschaften der Agrar-, Forst-, Ernährungs- und Umweltforschung <i>Umbrella organisation for the science associations in agricultural, forestry, food and environmental research</i>
DBV	Deutscher Bauernverband <i>National farmers' organization</i>
DFG	Deutsche Forschungsgemeinschaft <i>German Research Society</i>
DIB	Deutsche Industrievereinigung Biotechnologie <i>German Biotechnology Association</i>
FIBL	Forschungsinstitut für biologischen Landbau <i>Research Institute for Organic Farming</i>

GenTG	Genetic Engineering Act
GEN	Gen-ethisches Netzwerk (GMO-critical NGO)
GM	Genetically modified
NABU	Naturschutzbund Deutschland <i>German Nature Conservation Association</i>
NGG	Gewerkschaft Nahrung-Gaststätten-Genuss <i>Union for Food Industry</i>
PP	Precautionary principle
RKI	Robert-Koch Institut (Centre for Genetic Engineering)
SRU	Sachverständigenrat für Umweltfragen <i>German Council of Environmental Advisors</i>
UBA	Umweltbundesamt <i>Federal Environmental Agency</i>
RA	Risk assessment
RM	Risk management
vzbv	Verbraucherzentrale Bundesverband <i>Federal Consumer Protection Agency</i>
ZKBS	Zentrale Kontrollstelle für biologische Sicherheit <i>Scientific Advisory Committee on Biological Safety</i>
ZsL	Zukunftstiftung Landwirtschaft <i>Foundation for Future Farming</i>

# CHAPTER ONE

## 1. Introduction

### 1.1 The research question

In Europe the public controversy over agricultural biotechnology is long-standing and ongoing. Since the onset of the technology its suggested beneficial claims have been strongly propagated by some and strongly contested by others. Yet the debate is not static and the parameters, themes and regulation have changed over time. From concerns in terms of environmental safety and health the debate seems now to have shifted to questions concerning the freedom of market participants and the safeguarding of their execution of choice. This shift can be observed in many European countries and yet each country shows specific discursive and developmental trajectories.

In Germany the change in debate was very pronounced. With the advent of the first BSE (bovine spongiform encephalopathy, also known as 'mad cow') case in the country at the end of 2000, a radical break with old-style productivist agricultural and food practices was announced – the “*Agrarwende*”. With the ensuing move towards more sustainable and consumer oriented agricultural practices, biotechnology policy became caught up in broader reform efforts. This thesis concerns the question of the policy shift in agricultural biotechnology as it developed in Germany between 2000 and 2004 as a result of the “*Agrarwende*”. It will analyze why the BSE crisis had such an effect on the German agro-biotech subsystem, how it affected regulation and to what extent it led to the institutionalization of new types of socio-political practices and relationships.

To fulfill this purpose the thesis uses cognitive-normative frameworks, in particular the approaches offered by Maarten Hajer and Paul Sabatier. As opposed to more realist or rationalist approaches to public policy, this research orientation stresses the point that both the way actors explain and understand the world and the way problems get defined and framed determine policy developments and outcomes. It seems that the controversy surrounding agricultural biotechnology regulation lends itself to the use of such

frameworks, as it is a conflict that is ascribed with many meanings and values. Some argue that it is a conflict about environmental safety, food production or health. For others, however, it is about innovation and technological progress, or about consumer autonomy. In the same vein, neither the risks nor the benefits of the technology are given facts. What is at stake has always been contested.

The aim of this work is thus to determine whether the controversy surrounding GM policies can be well and insightfully analyzed by focusing our attention on the role of beliefs and discursive constructions and interaction in the policy sub-field. In this sense the thesis will ask:

1) How can policy change be explained and illuminated by these two theories? What are their relative or different contributions - as two *different* cognitive and normative frameworks - to the study of policy processes and outcomes?

Related to these main questions the thesis will ask the following sub-questions:

2) What are the strength and limitations of each theory?

3) How are these theories contradictory or complementary?

## **1.2 The origin of the thesis**

This thesis developed within the framework of a European research project on the precautionary principle in agro-biotechnology. In the year 2002 I became the German research partner in the research project "Precautionary expertise for GM crops" (PEG) at the Institute for Sociology, University of Munich, Germany. The aim of the research project was to analyze the way in which current European practices – regulatory measures, expert judgements and stakeholder roles - compared with different accounts of the precautionary principle (PP). Coordinated by the Open University, UK, the project had a duration of thirty months, the case study covering the six year time period 1997-2003.

Before working as a researcher on this project I had already planned to write a PhD on questions concerning the (global) food system, an area in which I developed a growing interest over the course of my studies. More specifically I wanted to work on the relationship between food, agriculture, the environment, and their political regulation. As a political scientist it struck me that the issue of food was so little understood as something inherently political. I thought that the decisions taken in the food system were not only of concern to us as consumers but as citizens. This is what I wanted to write about. Taking the BSE crisis in Germany from the year 2000 as a starting point of my analysis, I finally decided to work on public/private food regulation in Germany, and the changes that the post-BSE “Agrarwende” policies brought about by looking at the German retail sector. This empirical focus, however, changed when I started to work on the subject of agro-biotech regulation.

The research into the use of the precautionary principle in the field of agro-biotech in Germany offered a lot of interesting insights into a current German/European/global food system conflict and its development over a specific period of time. Furthermore, it turned out that a lot of the material that I had already collected and the theoretical issues that I had considered before could be linked to this case study. Taken together, this all lent itself to a more in-depth study that could be laid down in a PhD thesis. Moreover, the PEG project aroused my interest in the area of cognitive-normative frameworks. While conducting the research on the PP on agro-biotech regulation, it became apparent that different risk framings influenced the understanding of the PP. Over the investigated period of time the relevance of these framings and the framings themselves changed. The most significant trigger for change was, however, the BSE crisis. This was a very interesting by-product of the study and warranted a deeper look into the dynamics of framing and its impact on policy change. Having taken the decision to make this my focus in a PhD thesis, at the time of finishing the EU project I had significantly developed my theoretical frameworks and research questions to be tested on a national empirical study.



### 1.3 The theoretical approaches

The thesis discusses the role of beliefs and discourse in the German example of policy change in the field of agro-biotechnology regulation. In answering the questions posed above the following two approaches will be used: Maarten Hajer's discourse coalition framework (DCF) and Paul Sabatier's advocacy coalition framework (ACF).

In his study "The politics of environmental discourse" Hajer (1995) uses discourse analysis to examine environmental policy-making. Therein he advances his central claim that "the developments in environmental politics critically depend upon the specific social construction of environmental problems." For Hajer a discursive approach highlights the fact that the understanding and framing of an issue is influencing the way in which the problem is handled and solved politically. In opposition to other variations, Hajer's understanding of discourse analysis does not simply refer to the analysis of discussions (text) around the subject but includes the institutional context within which things are said and done. Hence discourse is analyzed as a particular practice. A specific interpretation of the subject matter then privileges one social practice over the other, gives rise to specific relationships and forecloses certain strategies. Identifying coalitions that gather around and form and interpret story-lines, as well as relating these to specific social practices and policy change is the key analytical effort to be made in this approach. Using this approach policy analysis is advanced as an interpretative activity that follows the argumentative struggles that form and decide a particular policy area.

Sabatier's theoretical approach (Sabatier/Jenkins-Smith 1993; Sabatier 1998), the advocacy coalition framework, focuses on the role of beliefs in the policy process.<sup>1</sup>

Sabatier's advocacy coalition framework advances the claim that policy processes are best understood as products of competition between advocacy coalitions that try to advance certain policy beliefs. Central to the ACF is thus the idea of a shared belief system amongst coalitions. Within these belief systems, the ACF identifies three

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<sup>1</sup> For the sake of simplification, the following discussion on the ACF will mainly draw on Sabatier (1998). Yet it should be remembered that the approach was actually developed together with Jenkins-Smith.

hierarchically structured categories: a deep core of fundamental ontological and normative beliefs. A second range of policy core beliefs that represent a coalition's basic normative commitments in the policy domain and finally a set of secondary aspects comprising instrumental considerations. The ACF perceives policy change as a transformation of a hegemonic (deep or core) belief system within a policy subsystem. This can be the result of two processes: First, policy change can result from non-cognitive events originating outside the policy subsystem, which can impact on the power distribution among actors. As a second element the ACF introduces the idea of policy oriented learning which can lead a hegemonic coalition to redefine and adapt its belief system in order to reach their goal. The ACF thus requires policy analysts to identify coalitions and to map their respective belief system. It further requires identification of the causes of change, be it through learning or external events. Policy outcome can then be partly understood as the victory of a certain belief system.

Hajer's discourse analytical framework and Sabatier's advocacy coalition framework both offer a way of analyzing the policy process from a cognitive-normative angle. Although they share some analytical components, the approaches differ considerably, especially with respect to their ontological and methodological grounding. The thesis will sketch, compare and discuss the two analytical frameworks. Taking the empirical material as a basis, it will use these frameworks as analytical lenses in order to test their explanatory power for understanding the German GM regulatory process.

#### **1.4 The empirical case study**

The concepts and framework given will be applied to the German GM crops/food debate from the early 1990s up to July 2004. The story is briefly told as follows:

The first mad cow disease case in Germany in November 2000 and the subsequent Foot and Mouth disease, which spread across the EU, sent shock waves through the agri-food production system in Germany. The crisis changed the institutional framework of the food safety system and triggered a reorientation of overall agricultural policies. Under the

slogans “Agrarwende” (turnaround in agricultural practices) and “precautionary consumer protection” (“vorsorgender Verbraucherschutz”), policy changes were brought on track by the new Green Minister for Agriculture Renate Künast in order to reform a system, which was identified as productivist, oblivious to consumer preferences and unsustainable.

The crisis also affected GM food policies. The new GM policy line proposed by the new Ministry of Consumer Protection, Food and Agriculture was framed around “Agrarwende” and “consumer choice”. This way for the first time a government institution propagated a new way of conceptualizing of agro-biotechnology applications by linking it to the broader problématique of agriculture and food production. For the sake of agricultural change Minister Künast propagated organic agriculture as a model for more sustainable forms of farming. In this vision, new technologies needed to prove their contribution toward the goal of sustainable agricultural change and to stand the test with consumers and producers and their food/feed/seed choices.

This new approach towards agro-biotech was, unsurprisingly, highly contested. Before the BSE-crisis, Germany’s policy had been predominantly driven by a neo-liberal framing of biotechnology as a central tool for innovation, technological progress and international competitiveness. The official regulatory controversy was confined to questions of safety and risks, which were in turn held to be answerable within a strict scientific paradigm. As opposed to this, rather than focusing on risk the new discourse stressed options and solutions for agricultural and food systems. The choice and “Agrarwende” debate thus challenged the established understanding of what GM policy-making should be about and threatened entrenched institutional perceptions, arrangements and power relations.

Ultimately, an animal disease brought a very different dynamic into the biotech subsystem and opened up space for a new policy approach, for institutional and legislative change. It is this remarkable development that the thesis will re/deconstruct in light of the two theories.

## 1.5 Thesis structure

The thesis is arranged in nine chapters.

*Chapter two* will locate the thesis theoretically and cover in greater depth the theoretical assumptions of Hajer and Sabatier.

*Chapter three* will lay down the methods used and explain the research design and information sources.

Chapters four to eight follow a chronological order:

*Chapter four* will begin the empirical section starting with the area of the early 1990s. The objective of the chapter is to capture the beliefs, central policy discourses and coalitions of the period by using Hajer and Sabatier as lenses. Setting the stage, the chapter will introduce the application of the theories and define the terms of reference for understanding the nature and extent of policy change following the BSE crisis.

*Chapter five* will look at the transition period between the years 1998 and 2000. This chapter describes a gradual departure from the GM policies of the 1990s and explains the pre-BSE status quo.

*Chapter six* will look at the "trigger" for the policy shift - the BSE crisis in November 2000. The two frameworks will be used as explanatory devices to understand the food/agricultural crisis and its initial effects for agro-biotechnology policy.

*Chapter seven* will take the narrative further and look more deeply into the most important event in the subsystem in the year 2002, the stakeholder conference "*Diskurs grüne Gentechnik*". As the BSE crisis has changed the terms of the debate this chapter will analyze how this new policy language affects the argumentative developments between the coalitions.

*Chapter eight* will look into the most recent developments of the agro-biotech subsystem. Again using Hajer and Sabatier, it will analyse and explain the German coexistence debate and the institutional and legislative changes in the agro-biotech subsystem up to the year 2004.

*Chapter nine* will summarize the work, answer the main research questions and conclude the thesis.

In a nutshell, the thesis will:

- Trace the history and development of German policies for agricultural biotechnology
- Identify and analyze key discourses and belief systems held by various coalitions
- Identify and analyze key (social, political, discursive, normative) factors that have shaped the developments and brought about changes in institutions and policies
- Contribute to a better understanding of cognitive-normative frameworks in policy analysis

## CHAPTER TWO

### 2. Theoretical analysis

This chapter will set out the theoretical framework of the thesis in relation to public policy theories as a whole and cover in greater depth the theoretical bases of the approaches of Hajer and Sabatier. In order to answer the research question one needs to have a sound understanding of the approaches, their theoretical claims, assumptions and the similarities and differences between them. The chapter will begin by situating cognitive-normative approaches in relation to other public policy approaches. This will give an idea of where these kinds of approaches come from and the kinds of problems to which they can potentially be applied. It will then go on to sketch the approaches and compare their key concepts. Finally the main concepts, which will be tested on the empirical case study, will be summarized in a table (Table 1).

#### 2.1 Cognitive-normative frameworks in policy analysis

What factor(s) do we need to look at in order to understand the process of policy-making? A great many social scientists have already wrestled with this question and, unsurprisingly, produced almost as many answers. Since there is a need to reduce complexity, the different approaches developed gave varying advice on the factors found to be critical and those, which could be rather ignored. For many years the analysis of public policy – whether in the field of politics or international relations - was very much influenced by so-called 'models of a rationalist understanding' of policy making under which one could include rational choice inspired, as well as institutionalist approaches.

There are, of course, many different strands within these specific research traditions but broadly speaking, in rational choice inspired approaches policy was conceptualized as the result of rational actor's preferences and interests. Examples from the vast number of approaches are, in the field of politics, the game-theoretic tradition or institutional rational choice (for example, Weingast 1996; Scharpf 1997); in the field of international relations

Axelrod/Keohane (1985). In contrast to this, in the institutional tradition the research focus was on structural and institutional factors that shape, mediate and determine the policy process (for one example, Skocpol 1979).

Another strand to be included under rationalist models in policy research is the 'stage heuristic' or policy cycle model. As opposed to a more static institutional analysis, the emphasis is placed upon a procedural dimension ('politics' rather than 'polity') in policy making. The policy process is thus defined as a sequence of stages in which problems are conceptualized, brought to government for solution, and in which policy options get selected and finally implemented. This model is based on a set of assumptions, for example, methodological individualism, which allowed for simulating actor's behaviour and policy maker's decisions (for example, Windhoff-Heritier 1987).

To sum up briefly, from a rationalist point of view interests or institutions (actors or structures) were the central categories identified as being decisive in the policy process - a process which could be understood and described in a schematic and linear fashion. Dissatisfaction with these rather limited approaches in explaining 'real existing' policy has led researchers to develop and refine alternative models of explanation, both within and outside these research traditions. Additionally, some authors point to the emergence of new problems, especially with respect to environmental risks and uncertainties, which have spurred this search for new analytical models (Beck 1986). One of these more recent research developments point to approaches that emphasize cognitive and normative frameworks. A definition of these frameworks is given by Surel (2000):

"Cognitive normative frames...are intended to refer to coherent systems of normative and cognitive elements which define, in a given field, 'world views', mechanisms of identity formation, principles of action, as well as methodological prescriptions and practices for actors subscribing to the same frame. Generally speaking these frames constitute conceptual instruments, available for the analysis of changes in public policy and for the explanation of developments between public and private actors which come into play in a given field" (ibid.: 496).

As opposed to rationalist approaches to public policy, the key argument here is that developments in public policies are, to a large extent, determined by the framing of policy problems and solutions. In opposition to what they claim to be overly simplistic interest/structure based models, these approaches suggest that ideas, beliefs and discourse play an important role in understanding and describing public policy making.

Recent years have seen a proliferation of literature covering such approaches. In policy science and international relations alike, talk is now of "systems of meaning" or "the role of ideas" (Jachtenfuchs 1995), "worldviews" (Goldstein/Keohane 1993), "interpretative schemes" or "frames" (Rhein/Schön 1993), "epistemes" (Haas 1992), "paradigms" (Hall 1993, Capone 2001), "discourses" (Dryzek 1997; Hajer 1995; Escobar 1996) or "belief systems" (Sabatier 1998), highlighting that there is more to the policy process than just institutions or rational actors. Yet apart from the common assumption of the importance of cognitive and normative 'variables' these various conceptual models are informed by a number of different perspectives. For instance, dissatisfaction with the rational actor approach has led some scholars to develop a more sociological line of inquiry, which recognizes that actor's preferences might be influenced by cultural rules and norms (in sociological institutionalism, Powell/DiMaggio 1991). Others have tried to combine individual normative components with rational choice assumptions (for example, Braun 1998), while yet others integrated 'ideas' in a historical materialist type of analysis (Cox 1996). In accordance with this wide variety of approaches, the status and significance of cognitive/normative concepts varies greatly. For instance, for some, cognition, discourse or norms are the main object of analysis while for others discourse or ideas are more 'intervening' or 'mediating' variables, to be integrated into a more traditional kind of research design (Nullmeier 2001).

The two approaches that will be used and tested in this thesis come from two different theoretical backgrounds. Maarten Hajers "argumentative discourse theory" can be located in the tradition of constructivist, post-modern approaches in policy science (for example, Fischer/Forester 1993), while Paul Sabatier's "belief system" approach developed out of a



rationalist public policy tradition, more specifically, the policy cycle and rational choice model. When Hajer speaks of “discourse” and Sabatier of “belief systems”, they are referring to different things with different consequences for their respective models of policy-making and explanations for change. In other words, in cognitive normative frameworks, the use of a certain language may well point to similar concepts but not necessarily need to do so. The use of a supposed common language does not necessarily imply where these cognitive/normative ‘factors’ reside or how they work or function in the policy process.

For understanding the dynamics of policy changes, cognitive-normative frameworks go ‘beyond’ the interplay of actor’s interests or institutions. Yet the interesting question is not only whether these concepts matter (and how they are possibly linked to ‘older concepts’), but to find out *when, how and with what effects*. By using two representatives of these frameworks one can highlight the differences between these approaches and thus evaluate their relative ‘usefulness’ that is, each of their contributions and limitations to policy research in the case of German agro-biotechnology policy.

## **2.2 The theoretical frameworks**

### **2.2.1 The advocacy coalition framework by Sabatier and Jenkins-Smith**

The advocacy coalition framework (ACF) has been developed and applied by Sabatier and Jenkins-Smith over a number of years (Sabatier/Jenkins-Smith 1993; Sabatier 1998). The following discussion draws mainly on Sabatier (1998) as one of the more recent statements of the approach. As mentioned above, the ACF developed out of a rationalist public policy tradition. Being mainly opposed to ‘stage heuristic’ and conventional political science theories, such as institutional rational choice, perceiving them as over-simplistic, the ACF was put forward as a more promising theoretical public policy framework that combines insights from different theory traditions (Sabatier/Jenkins-Smith 1993). The main arguments in the ACF are as follows:

The ACF views the policy process as a competition between coalitions of actors who share and advocate beliefs about policy problems and solutions. This competition of coalitions takes place within a *policy subsystem* (see Figure 1). Within the policy subsystem it is assumed that there will be a small number (usually one to four) of *advocacy coalitions*, which are comprised of various actors ranging from governmental organizations to private organizations, all actively concerned about a policy. Thus advocacy coalitions can include policy makers, business representatives, pressure groups, scientists or even journalists. According to Sabatier (1998: 103) these actors of a coalition both:

“a) share a set of normative and causal beliefs and b) engage in an non-trivial degree of coordinated activity over time.”

Central to the ACF is the idea of a shared belief system. Within these belief systems, the ACF identifies three hierarchically structured categories: At the top is a deep core of fundamental ontological and normative beliefs that define a vision of the individual, society and the world. These *deep core beliefs* are resistant to change; for Sabatier, change amounts to religious conversion. Below the deep core beliefs come the *policy core beliefs* they: “represent a coalition’s basic normative commitments and causal perceptions across an entire policy domain or subsystem” (ibid.: 103). They include fundamental value priorities, examples being the relative importance of economic development versus environmental protection or the division of authority between governments and markets. According to the ACF, these policy core beliefs “are the fundamental ‘glue’ of coalitions” (ibid.) and are difficult but not impossible to modify. Below the policy core beliefs is a set of *secondary aspects* comprising instrumental considerations on how to implement a policy. These are the most easily adaptable elements and susceptible to change.

Advocacy coalitions, the ACF argues, form around beliefs, and particularly around policy core beliefs. In order to realize the goals generated by their beliefs, coalitions are instrumentally rational and adopt numerous strategies to influence policy makers.

Conflicting strategies between coalitions are normally mediated by a third party, the *policy broker*.

Apart from beliefs, Sabatier identifies a set of exogenous, non-cognitive variables that also impact on the subsystem actors and the policy-making process. First are relatively stable parameters, such as basic institutional structures or fundamental socio-cultural values and the social structure. Second are external events, such as changes in socio-economic conditions or changes in governing coalitions.

The ACF perceives of *policy change* as a transformation of a hegemonic (deep or core) belief system within a policy subsystem. This can be the result of two processes. First, policy change can result from *non-cognitive events* originating outside the policy subsystem, which can impact on the power distribution among actors. As a second element the ACF introduces the idea of *policy oriented learning*, which can lead a hegemonic coalition to redefine and adapt its belief system and their strategies in order to reach their goal.

Policy oriented learning is instrumental and defined as "...relatively enduring alterations of thought or behavioral intentions which result from experience and/or new information and which are concerned with the attainment or revision of policy objectives" (ibid.: 104).

However, as Sabatier argues, policy oriented learning should not be over-stated for it can alter secondary aspects of a coalition's belief system but hardly ever results in changes of policy core beliefs. Hence:

"...changes in the policy core aspects of governmental programmes require a perturbation in non-cognitive factors external to the subsystem" (ibid.: 105).

Based on this model, Sabatier and Jenkins-Smith developed a comprehensive set of twelve hypotheses to test the ACF empirically (Annex 1).

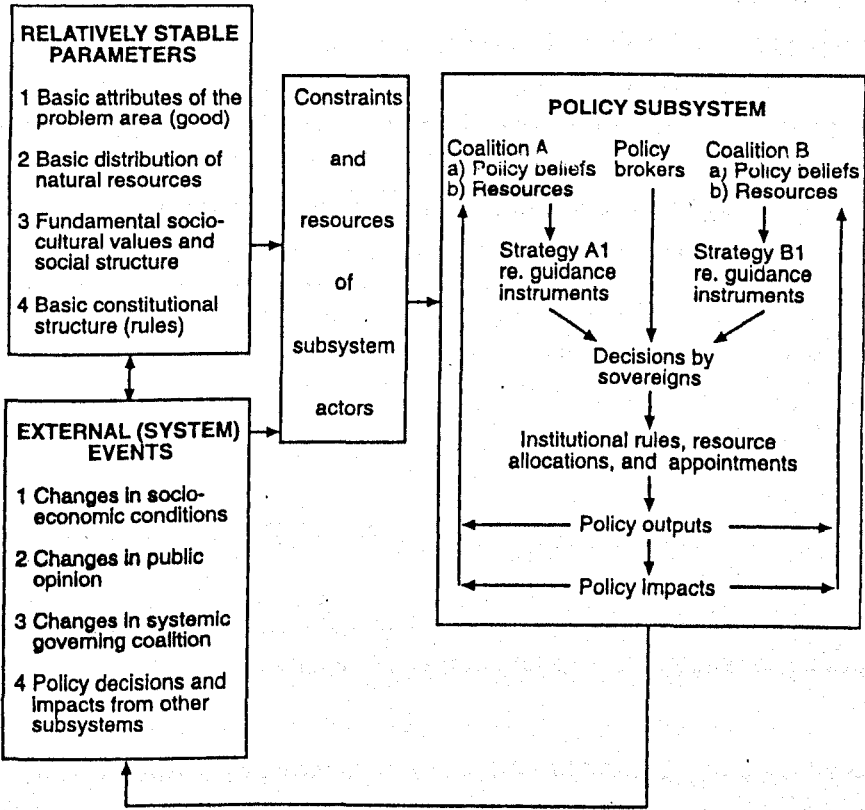


Figure 1: Diagram of the ACF (Sabatier 1998: 102)

2.2.2 The discourse coalition framework by Hajer

Maarten Hajer's discourse coalition approach (DCF) stands in the tradition of social constructivist perspectives. Hajer views his policy approach as part of a 'post-positivist' research tradition that draws attention to the role of language or narratives in explaining policy processes. Rather than viewing the constructivist approach as a mere refinement to more traditional approaches in public policy, Hajer argues for a need to establish the constructivist approach on a more 'robust footing', as pointed out in his study "The Politics of environmental Discourse" (Hajer 1995). Against this claimed need, Hajer introduces his own "argumentative approach" to the study of environmental politics. Insights for his theory are taken from Michel Foucault's discourse theory and Rom Harré's and Michael Billig's social-psychological thinking.

For Hajer, a discursive approach to politics highlights the fact that the understanding and the framing of an issue is influencing the way in which the problem is handled and solved politically. According to the DCF, politics is thus conceived as "a struggle for discursive hegemony in which actors try to secure support for their definition of reality." (Hajer 1995: 59). Central to Hajer's thinking is the *concept of discourse*:

"Discourse is here defined as a specific ensemble of ideas, concepts, and categorization that are produced, reproduced, and transformed in a particular set of practices and through which meaning is given to physical and social realities" (ibid.: 44).

A discourse analysis tries to make sense of regularities of variations in what is being said and written. However, this does not simply refer to the analysis of discussions around the subject but has a clear institutional dimension. It involves looking at the context in which a statement is made or to whom statements are directed. Discourse is thus internally related to the social practices in which it is produced and reproduced.

Means for the creation and maintenance of a specific discursive order are *story-lines*.

Story-lines are another key concept in the DCF:

"Story-lines are narratives on social reality through which elements from many different domains are combined and that provide actors with a set of symbolic references that suggest a common understanding" (ibid.: 62).

Story-lines selectively problematize specific aspects of reality. They fulfill an important role in the clustering of knowledge, the positioning of actors and ultimately in the creation of coalitions amongst the various actors in a policy subsystem. As story-lines get widely used they become ritual in character and give permanence to the debate. By simply uttering a specific element one effectively re-invokes the whole story-line. *Metaphors*, as another concept, stand for something else and create important linkages between different issues.

For Hajer story-lines fulfill the role of facilitating the reduction of discursive complexity of a problem and hence create possibilities of problem closure. Story-lines do not primarily derive their discursive power from the fact that the specific elements fit together in a logical way, but because the elements exhibit *discursive affinities* and "the story sounds right" (ibid.: 63). The political power of a text, as Hajer goes on to say, does "not derive from its consistency but comes from its *multi-interpretability*" (ibid.: 61). In this way, in Hajer's DCF story-lines are understood as important vehicles for political change. The emergence of new story-lines can re-order understandings and/or provide for a different access to a certain issue.

Directly connected to the concept of story-lines is the important concept of *discourse coalitions*. These are formed by actors who "for various reasons are attracted to a specific (set of) story-lines (ibid.: 65). Story-lines are the discursive cement that keep a coalition together. For Hajer, discourse coalitions have a linguistic basis, that is, story-lines - not interests or beliefs - form the basis of a coalition. More importantly, story-lines can even change an actor's understanding of his/her own interests and can thus contribute to change.

Apart from the disciplinary/constraining effects of discourse Hajer stresses the possibility of it having enabling functions, as mentioned in Foucault's idea of 'tactical polyvalence of discourses':

"This refers to the way in which the various discursive elements, that might have been introduced for various unrelated strategic purposes create a new discursive space within which problems can be discussed. Here the structuring capacity of discourse gains its meaning within the context of consciously operating actors" (ibid.: 50).

However, Hajer criticizes Foucault for being ultimately ambivalent as to the role and agency of the discoursing subject. For Hajer, Harré and Billig's focus on argumentative interaction between individuals and the production of story-lines serves as a correction to Foucault's theory. From this point of view politics is seen as an argumentative struggle in

which actors try to persuade others of their views and seek to position themselves and others in a specific way. Against the background of and with insights from social-interactive theory Hajer finally claims that "the subject can be studied as actively involved in the production and transformation of discourse" (ibid.: 55).

In Hajer's view, a discourse has finally become hegemonic in a given domain when:

a) the conditions of *discourse structuration* exist, that is: "...if the credibility of actors in a given domain requires them to draw on ideas, concepts, and categories of a given discourse..." (ibid.: 60).

b) when *discourse institutionalization* has taken place and "...a given discourse is translated into institutional arrangements ..." (ibid.: 61).

### **2.2.3 Comparison and discussion of the approaches**

Hajer's discourse analytical framework and Sabatier's advocacy coalition framework both offer a way of analyzing the policy process from a cognitive-normative angle. Although sharing some components in analysis, the approaches differ to a considerable extent. The following section will compare and discuss the two approaches along a number of key issues.

Hajer and Sabatier agree that the most useful level to focus on is the *policy subsystem*. The concept of the subsystem focuses on groups/people or organizations interacting regularly to influence policy formulation and implementation within a given policy problem or issue. The nation state does not constitute a boundary since policy subsystems will involve actors from several levels of government. Both authors stress this as one of the advantages of their framework as it allows focusing on relationships and processes that transgress sub-national and national borders.

Furthermore, in order to analyze the subsystem Hajer and Sabatier both use *coalitions of actors* as primary units of analysis. Therefore, they both eschew more conventional approaches to policy analysis that focus on individual actors, structures or institutions. Their research objectives are identified empirically as 'various people and institutions

involved in the policy process'. In this way they point their attention to the fact that policy-making is often informed by ideas, representations and institutions that originate outside of what is defined as 'the political realm'.

### **The basis of coalitions: Beliefs versus discourse**

Although both authors use *coalitions of actors* as primary units of analysis, the basis of their coalitions differ fundamentally. Sabatier aggregates actors around shared beliefs and he requires that these advocacy coalitions show a degree of coordinated activity over time. Hajer does not share this idea of stable belief systems. For him it is discourses and story-lines that build the basis of a coalition. In the DCF there is also no emphasis on common interaction or any kind of institutionalized relationships. In contrast to advocacy coalitions, Hajer's discourse coalitions can take account of multiple motivations for coalition building, independent of specific beliefs, and are therefore much more readily changeable and amendable for specific political purposes. Coalitions can then be built for strategic purposes on the basis of a perceived common political project. Accordingly, for Sabatier, beliefs are the basis for maintaining and extending a coalition whereas discourse coalitions live and die with discursive developments.

### **The role of language**

Hajer's constructivist approach is built on a theory of language and representation. According to this understanding, things do not 'exist' unless they are brought into being by language and discourse. Hajer claims that "the dynamics of environmental politics [i.e. the specific 'reality' of an ecological problem (*added K.B.*)] cannot be understood without taking apart the discursive practices that guide our perception of reality" (Hajer 1995: 17). In other words, for Hajer environmental issues only become political issues once they are constituted as such in environmental discourse. Language constitutes meaning and this self-proclaimed "anti-realist" (Hajer 1995: 264) stance clearly separates Hajer's approach from that of Sabatier. Sabatier takes the existence of an environmental problem as a starting point. Even though he holds on to the constructivist notion that "actor's



perceptions are strongly filtered by their preexisting normative and other beliefs" (Sabatier 1998: 109), and that one of the main problems for coalitions consists of "coming to a common understanding of the policy problem" (ibid.: 115), Sabatier does not look into the process of reality construction through argumentative interaction.<sup>2</sup> Instead he offers a framework that builds upon and integrates more traditional factors such as institutions or socio-political parameters.

### **The role of expertise and knowledge**

The question of how scientific knowledge and empirical evidence is treated in both theories merits some closer elaboration. Both authors hold that the question of science is of high importance to policy-making, particularly in the field of environmental politics. However, their views on the subject differ fundamentally. In the ACF, Sabatier/Jenkins-Smith (1993) argue that "many aspects of a coalition's belief system are susceptible to change on the basis of scientific and technical analysis" (ibid.: 41). In this respect the authors speak of the "enlightenment function" (ibid.: 42) of scientific research. In fact Sabatier/Jenkins-Smith entertain a rather idealized picture of science. They establish technical knowledge and expertise as something separate from beliefs and the policy process and work on the assumption that science could be an unbiased, objective arbiter in a conflictive policy situation. In this vein they suggest that the participation of experts can play a leading role in bringing about policy consensus.

In the light of their research Sabatier/Jenkins-Smith make some qualifications to the science-policy relationship, for instance they admit that knowledge – however 'objective' – may be rejected once it clashes with core beliefs or that "scientists are not necessarily 'neutral'... but instead, are often members of coalitions" (Sabatier 1998: 108). However,

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<sup>2</sup> Sabatier himself is very critical of the constructivist theory tradition. He agrees that "it is clear that much of social 'reality' is 'socially constructed'" (Sabatier 1999: 11) but criticizes constructivism mainly for leaving ideas unconnected to socioeconomic conditions, institutions and individuals. Most of all, however, it seems that Sabatier criticizes the constructivist framework from a Popperian point of view arguing that these approaches are non-falsifiable and cannot be rendered empirically concrete. Thus, constructivist approaches do not seem to fulfill Sabatier's basic criteria for scientific theory building which consist of identifying important variables, relationships, and causal connections and in developing a set of falsifiable hypotheses which are put to the test. This point then weighs most heavily in Sabatier's critique on constructivist approaches. This argumentation in turn puts him – from the point of view of radical constructivism – into a positivist corner.

this does not seem in principal call into question their belief in the virtue of the scientific method in policy debates.

Hajer's take on knowledge and expertise, in comparison, is very different. Again arguing from the standpoint of constructivism, Hajer strongly rejects the positivist assumptions as exemplified in Sabatier's approach. Referring to the sociology of science tradition, such as in Wynne (1992) and Jasanoff (1990), Hajer clearly defies the objective, enlightening character of scientific knowledge and expertise. Instead he states that the boundary between scientific expertise and politics is in no way preordained or clear. This also applies to the fact-value boundary. This is due to the socially constructed nature of science, meaning that scientific practice does not take place in a vacuum but is embedded in a social, cultural and political environment and hence influenced by these contextual variables.

Bringing this knowledge together with his discourse analytical thinking the science-policy relationship is thus "analyzed as a set of discursive practices in which rival groups of actors seek to impose specific authority claims and understandings of the problem on a policy community" (Hajer 1995: 140). Hajer also emphasizes the role of power in relation to science and knowledge: "Power should be analyzed as inherent in the knowledge claims and the various practices through which specific scientific claims gain authority and credibility" (ibid.: 139). Scientific claims thus become only another field of discursive practices that play into the conflict over the meaning and solution of problems.

### **The basis and role of policy oriented learning**

The ideas on policy oriented learning play a great role in Sabatier's approach.

Sabatier/Jenkins-Smith define policy oriented learning as "...an ongoing process of search and adaptation motivated by the desire to realize policy core beliefs" (Sabatier/Jenkins-Smith 1993: 44). In their approach to learning empirical evidence comes to play a crucial role. Sabatier's policy oriented learning is concerned with changes of beliefs of people within a coalition and across beliefs systems (i.e. between coalitions). As deep values and

policy core beliefs are less susceptible to change, learning processes mostly affect secondary aspects. External shocks, for instance new information, can lead a coalition to reconsider and change the secondary aspects of their belief systems, and can affect their strategies in ways compatible with their core beliefs.

Learning processes that lead to changes in policy core beliefs are thus highly unlikely. When core beliefs conflict, there is rather a tendency for each coalition to talk past each other resulting in the "dialogue of the deaf" (ibid.: 55). Yet Sabatier/Jenkins-Smith elaborate on conditions that are conducive to policy learning processes *between* coalitions. They argue that the probability for such learning taking place is higher in an apolitical forum dominated by professional norms, and in the case that problems are concerned that involve natural systems rather than purely social or political systems.

Hajer, on the other hand, does not have an explicit idea of policy learning. Yet he certainly criticizes Sabatier's understanding as it reveals a strong rationalist, linear and modern conception of learning processes and cognitive change. As outlined above, much criticism of Sabatier's idea of learning is due to his uncritical treatment of scientific knowledge on policy processes and conflict settling. Against this conception of policy learning, Hajer's idea of a similar process - he calls it reflexivity - and its effects are based on the discourse rationale. Hajer does not believe in a fixed value (belief) composition of individuals. Instead he considers that cognitive patterns are subject to discursive influence. As discursive interaction (i.e. language in use) is a constant process, the construction of new story-lines can create new meanings and cognitions and thus generate new insights. Yet he claims that for such 'clarifying deliberations' to take place there is a need for "reflexive institutional arrangements" (Hajer 1995: 286). For Hajer, the process of learning is thus a quality of discursive practices in which actors engage in order to come to a common understanding of the problem. A newly emerged common understanding can then again influence coalition formation and possibly help in overcoming policy conflict.

## **The treatment of power**

Sabatier speaks of power, but he does not link power directly to belief systems (rather 'those belief systems *in* power *have* power'). Thus from his framework one can detect a rather conventional, modern understanding of power. For instance, Sabatier uses stable external factors, such as basic constitutional structures or social cultural values as explaining variables. Non-cognitive events originating outside the policy subsystem, such as national elections, can have an impact on the power distribution among actors as they increase resources (money etc.) and open up opportunities for change through the "raw exercise of power" (Sabatier 1993: 45). The framework thus also acknowledges central features of institutional models, namely "that rules create authorizations" (ibid.: 28). With respect to the state Sabatier does not think in terms of the hierarchical centralized power of the state but of power as being more dispersed in federal and intergovernmental structures.

For Hajer, following Foucault, power is not a centralized concept that resides in a particular institution (e.g. the state or capital) rather it is more dispersed and omnipresent. The DCF puts its focus on the "micro-physics of power" (Hajer 1995: 252), that is, the more subtle features of various power practices. Discourse can be one such practice, but discourse does not by itself exert power. Rather the question is how a specific discourse is taken up in the process of creation and structure of fields of arguments, how it positions actors and issues and what definition it gives to the problem. As such, the "discursive construction of reality [thus] becomes an important realm of power" (ibid.: 21).

## **The question of interests**

The central feature of the ACF is its focus on belief systems of advocacy coalitions. According to the model, belief systems guide the behaviour of coalitions, and struggles between different antagonizing advocacies drive the policy process. To quote Sabatier: "the framework explicitly rejects the view that actors are primarily motivated by their short term self-interests" (Sabatier 1993: 27). The ACF does not deny the existence of

economic or political interests and distributional conflict. Yet it holds this to be more relevant in case of "material groups" who only maximize their self-interests, whereas purposive groups act on the basis of an ideology, e.g. collective welfare (Sabatier 1998: 116). Nevertheless in the ACF it is assumed that actors act on the basis of instrumental rationality (presumably 'rational' refers to means) and that ultimately actor's motivations are complex, including values, self-interest or organizational interest.

Based on the constructivist notion, for Hajer "interests cannot be taken as given a priori but are constituted through discourse" (Hajer 1995: 51). In this sense story-lines play an important role. The emergence of a new policy discourse may alter the perception of problems and opportunities, create space for the formation of new coalitions and reposition coalitions in the struggle for discursive hegemony. In this way story-lines can change an actor's understanding of his/her own interests and can contribute to policy change.

### **The cause of policy change**

The ACF has two principal sources of change: a) the values of coalition members and b) exogenous shocks to the subsystem. As outlined above, for Sabatier learning processes constitute one of the key variables for policy change. However, policy learning only affects secondary aspects of a belief system, which is why changes to the core aspects of a governmental programme require the perturbations in non-cognitive factors. Such factors external to the policy subsystem, for example, fundamental change on socio-economic conditions or elections, have the potential of altering the resources of coalitions and are thus primary determinants of political change. Yet because the impact of such events is unclear, Sabatier argues that significant external perturbations "are necessary but not sufficient, cause of a change in the policy core attributes" (ibid: 118/119). Instead they provide a "window of opportunity" which needs to be skillfully exploited and tactically used.

For Hajer discourse fulfills a key role in processes of political change. The emergence of new story-lines can re-order understandings and/or provide for a different access to a

certain issue. Story-lines can even change an actor's understanding of his/her own interests and can thus contribute to change. It is most important to him to highlight that discursive interaction can create new meanings, identities and forms of mediation that change the dynamic of the struggle for discursive hegemony. In this process, Hajer emphasizes the role of *credibility*, *acceptability* and *trust* in the explanation of policy change. Actors must believe in what they are told, arguments need to be *plausible*, attractive and need 'to fit'. In short, for Hajer it is argumentative exchange, the interpretation of an (external) event and the change in perspectives that explain the developments in policy making and change.

**Table 1: Comparison of the theoretical approaches**

	<b>Hajer's DCF</b>	<b>Sabatier's ACF</b>
Idea of policy making	Policy making as "interpretative activity" (what is the problem?) Politics as struggle for discursive hegemony	Policy making as competition over the authoritative allocation of values Problem given
Policy analysis	Constructivist, anti-realist, Hajer positions himself against what he calls a "realist tradition" that takes problems and interests for granted	Sabatier positions himself against a policy tradition that is caught in stage heuristic and simple rational choice models "Public policies incorporate implicit theories about how to achieve their objective... they involve value priorities"
Level of focus	Policy subsystem	Policy subsystem
Core unit to study	Discourse coalitions	Advocacy coalitions
Coalition basis	Linguistic base solely (formed for various reasons ) Story-lines hold coalitions together	Common policy core beliefs + degree of coordinated activity
Cause of policy change	Cognitive power of the story line and its "attractiveness"  Story-lines are essential in reproducing and transforming discursive orders  Story-lines can change an actors understanding of his/her interests  Credibility, acceptability, trust	Policy learning (although only on secondary aspects) or strategies  Major socio-economic changes, changes in public opinion. Changes in government are sine qua non for <i>major</i> change in policy core. These provide opportunity, but change depends on skillful exploitation of minority coalition.  New subsystems may emerge out of new conceptualization of problem
Policy learning	Result of language and argument Need for new reflexive institutions	Process of search and adaptation in order to realize core beliefs. Result of experience and/or new information
Role of expertise, knowledge	Socially constructed nature of science, science claims as authoritarian practice (power)	Does deliver objective information and instigate learning Experts can bring about policy closure
Power	Dispersed, depending on positioning effects of language, power as performative	More traditional idea of power as located in institutions and "resources"
Interests	Are not given but subject to "arguments"	Does talk of interests as a basis for coalition, assumes that actors are instrumentally rational, but holds that actors goals are complex

## Conclusion

In order to answer the research question on policy change in German agro-biotechnology regulation I have chosen to apply Hajers' argumentative discourse approach and Sabatier's advocacy coalition approach. As representatives of cognitive normative frameworks, these authors understand that cognitive normative frames not only significantly influence the process of policy-making, but that these dimensions are organizing principles on the basis of which policy makers act and the process of change is unfolding. A complex web of discourses or belief systems respectively, configure the process of public policy making and change in policy implies certain modifications to these systems.

The approaches of Hajer and Sabatier appear to some extent similar. However, when looked at more closely, the differences are quite substantial. In Hajer's DCF we are facing a theoretical body, which is highly interpretative. Sabatier's approach, in contrast, remains selective and limited in its interpretative scope. There, traditional elements of institutional rational choice are combined with insights from cognitive and social psychology.<sup>3</sup> On the basis of these differences, the different kinds of insights into the dynamic of policy change offered by these two analytical lenses will be shown.

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<sup>3</sup> Interestingly in the German discussion the ACF is partly categorized as belonging to the 'interpretative' theory approaches. In the United States, however, Sabatier's work is discussed as radically opponent to the interpretative or argumentative policy theory tradition (Bandalow 1999; Fischer 2003). While this is certainly interesting in terms of perception history it shows how theories themselves are subject to perception biases.



## CHAPTER THREE

### 3. Methodology and operationalization

This chapter will focus on the process of research and interpretation, explaining the methods and information sources used to address the research questions and to test the theories. In focusing on both approaches, it will be shown how the main concepts were operationalized, which sources of information were used, and what the rationale for the analysis and the specific interpretation was. In the research process, I tried to stay as close to the theories as possible, that is, to collect and analyze the material in ways in which Hajer and Sabatier would presumably do so. In this way the theories could be tested to the full, and the contribution of each theoretical body to answering the research questions judged.

#### The PEG project as a methodological forerunner

As mentioned earlier, the idea to use cognitive normative theories to understand the policy process and the process of change arose from research done within the framework of the European research project on "Precautionary expertise for GM crops" (PEG). The aim of PEG was to analyze the use of the precautionary principle (PP) with respect to regulatory measures, expert judgements and stakeholder roles in the area of agro-biotechnology. Even though the PP is a widely accepted regulatory principle in this field, its meaning is contentious, and subject to interpretation. Given this ambiguity, it became part of the research project to analyze how specific constituencies defined these issues and what this in turn meant for their judgement on biotechnology and for policy solutions.

With this, the investigations into the PP became a matter of dealing with different judgements. The study showed that rather than being an abstract principle, precautionary expertise included dimensions far beyond questions that might be typically associated with a principle in environmental law; It included value commitments, political interests in the agro-food chain as well as questions of sustainable development or technological

decision-making. This is when the concept of 'risk framings' proved to be a helpful device to cluster the data and to make sense of the findings (Boschert/Gill 2004).

Even though PEG was not set up as a research project to deal with cognitive-normative theories, the project theme and the method proved helpful and inspiring for such an analysis. In the wake of the research, the material was thus increasingly collected and interpreted in light of these theoretical insights.

### **3.1 Structure of the thesis**

The thesis deals with the question of change in agricultural biotechnology between the years 2000 and 2004. However, I decided to begin the empirical study in the early 1990s. I believe that only by taking such a 'long duree' can the analysis best trace the changes and breaks in discourse and beliefs systems and show the specific nature of change in agro-biotech policies in Germany after the BSE crisis. In other words, this thesis undertakes, following Foucault, a "genealogy"<sup>4</sup> of the GM conflict in Germany (or, following Sabatier, one could say it traces the evolution of a subsystem). To this end the thesis is structured into nine chapters, of which Chapters four to eight follow a chronological order and entail the bulk of analytical and interpretative work.

Given the focus, the analytical scrutiny over this relatively long period of time is not evenly spread. I identify a specific event in the year 2000, the BSE crisis, as a trigger of major change. I use this event to divide the period of investigation into specific sequences, looking at the period before, but mainly focusing on the time after the event. Accordingly the time period from around 1990 up until 1998 will be presented in one chapter (Chapter four). In this I rely mostly on secondary sources. Following this will be a transition phase (Chapter five), informed by secondary material and newly collected sources. The following Chapter six is one of the key chapters, focusing on the trigger for change, that is, the BSE crisis and its effects. As this chapter is more current and analyzes the events in greater depth - covering a time period of only one year - it is mainly informed by primary sources.

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<sup>4</sup> This is only to capture the idea of Foucault that history is not meant to be some unfolding of any ideal schema but a constant struggle between different social forces (Barret 1991).

The last two empirical chapters (Chapters seven and eight) will cover the time period from 2001 up until 2004 and will be additionally supported by participatory observation and interview material. Finally, Chapter nine will compare the results and answer the main research questions.

### **3.2 Operationalizing central components of both theories**

How can policy change be explained and illuminated by these two theories? What are their relative or different contributions to the study of policy processes and outcomes? In order to address these major research questions the research process was organized in the following way:

#### **3.2.1 Information sources**

##### **The policy subsystem and the relevant actors**

According to Sabatier, a subsystem focuses on "groups of people and/or organizations interacting regularly ...to influence policy formulation and implementation within a given policy area" (Sabatier 1998: 111). Following this definition, in this thesis the actors/institutions were selected empirically. The DCF does not have a clear idea of the delineation of the subsystem, as the policy domain is not a clear-cut space but discursively created.

However, what about changes in the subsystem and to the range of policy actors involved? From the DCF point of view, change in discourse can change the policy subsystem. With a redefinition of a problem the people affected by a policy decision may change. New actors from other subsystems become stakeholders and/or policy makers. From the ACF point of view, new subsystems may emerge when new issues gain importance. Methodologically this means analyzing why new actors appear in the subsystem and on what basis (discourse of belief) they join coalitions (see below).

## **Documentary information sources**

Since the policy subsystem of agro-biotech regulation spans a wide variety of policy actors (e.g. regulatory agencies, advisory bodies, scientific research institutes, industry-wide bodies, seed companies, retailers, environmental NGOs, consumer NGOs, farmers' organizations etc.), an extensive range of texts needed to be selected. These relevant public and private information sources included primary documents in printed form or from web pages, position statements of organizations, and articles in the mass media and scientific press. Given the chosen time frame, the thesis also drew upon and integrated available secondary studies on the development of biotech regulation in Germany, or on more specific aspects of the historical events and subjects. The responses of the public were equally important, and could be evaluated through public opinion polls, surveys, election results, the statements of interest group leaders, opposition parties, and so forth. This collection of printed material was an ongoing process throughout the thesis development. As most of these information sources were printed in German, I myself translated the cited sections into English. These translations were checked by a bilingual native English speaker.

## **Face-to-face interviews**

As an important source of information, the study draws upon a series of twenty-four face-to-face interviews with individuals representing constituencies from the wide range mentioned above (Annex 2). The interviewees were selected on the basis of relevance and representation. In particular I wanted to make sure that every group or institution that played a role in the policy process or had a stake in regulation was represented. Altogether over forty requests for interviews were written, followed up by numerous phone calls. In the end there was a broad and comprehensive range of actors on my interview list. The interviews themselves were semi-structured, based on very broad standard questions of the PEG project, but subject to variations and framings depending on the interviewee. Principally open-ended, most interviews had about 90 minutes in length and

were both, recorded and transcribed, though translated only where used in citations. Cited sections have been sent to interviewees for clarification and authorization.

The interviews were a very rich and important source of information for the analysis, especially because some of the information was, so to speak, first hand and brand-new (a major stakeholder conference, the *Diskurs grüne Gentechnik* was taking place at the time). The interviews were used to analyze how actors interpreted the events, how they framed the issues and what they saw as being important or unimportant in the policy field. The interviews were thus used to facilitate and complete the mapping out of discourses and beliefs. Moreover, the interviews facilitated analysis of comparison and interaction amongst policy actors, i.e. when interviewees explained their position/action in relation to others or commented on other stakeholders. They were used to generate additional information about causal chains, argumentative exchange and the state of the art of discussion in the field. Equally importantly, the interview material provided more of a sense on how 'to read' the various documentary sources provided by specific constituencies. They thus proved to be valuable guidelines for sorting and interpreting the huge amount of printed material.

### **Participant observation**

When looking at discourse and beliefs system change it is indispensable to consider the *interactive processes* involving those most prominent in policy-making. The interviews already delivered information in this respect. However, equally informative was participant observation. Due to the current and topical nature of the subject, throughout this research, I have had the opportunity to attend many conferences, workshops and meetings on agricultural biotechnology issues. For instance, the German PEG team took part in the opening session for the "*Diskurs grüne Gentechnik*", as well as other issue-related stakeholder conferences. These events to some extent guided the direction and content of my research by vividly illustrating the argumentative dynamic and the level of agreement or disagreement amongst key players in the biotechnology debate. Last but not least, participation provided an opportunity for personal communication with a number

of stakeholders, to contact potential interview partners and to get a sense of the 'who talks to whom' or 'who hangs out with whom' in the bar after the formal sessions.

Interesting with respect to observing interactions, for instance, proved to be the preparation and the conduct of a national workshop as part of the PEG project. From the difficulties encountered in bringing stakeholders to participate ("another pointless discussion on biotech"), and from the process of the workshop itself a lot could be learned about the current national context, the (new) relationships between the actors, the ongoing polarization, and the state of the art of the arguments used in the topical discussion on biotech regulation (Boschert/Gill 2003).

### **3.2.2 The advocacy coalition approach**

#### **Where to look for beliefs?**

One of the main differences between the approaches lies in the distinction between discourse and beliefs. The main methodological difficulty therefore lies in identifying these hierarchical beliefs systems and separating them from discourses. For Sabatier, methods for investigating the content of belief systems include elite surveys, panels of knowledgeable observers, and content analysis (Sabatier 1993: 33). Sabatier/Jenkins Smith (1993) stress in particular content analysis of government documents and interest group publications as appropriate tools to acquire "intersubjectively reliable data" (ibid.: 237). In a long-term study on environmental policy this method was applied by coding the content of public documents (legislative and administrative hearings) and in applying regression analysis (Sabatier/Brasher 1993). Combining qualitative analysis with a quantitative method, the hearings were coded according to the hypotheses made in the ACF. This way beliefs and belief affinities between the central actors were determined, and the dynamics of coalition behaviour traced. In this thesis I exclusively used qualitative data in order to reconstruct the beliefs of the coalitions involved. I used a combination of content analysis of government documents, newspaper accounts and interest group publications, as well as elite interviews and personal observation (more detailed below).

## How to identify related beliefs across levels?

The advocacy coalition framework identifies three hierarchically structured categories, a deep core of fundamental beliefs, a second range of policy core beliefs and a set of specified instruments. The central idea is that from more general beliefs flow the more specific ideas in a policy area. For this to be true, policy preferences need to be traced back to more abstract values (normative and ontological beliefs) rather than to political or economic short-term interests. This can be done by searching for beliefs of a more general kind, that is, for explicit and implicit value-policy links in specific policy statements:

**Example:** In a policy statement we can identify the policy core belief: "Biotech does not serve societal interests." This sentence is uttered within the following context:

Quote: "Certain technologies are not beneficial toward to the goal of a more sustainable agriculture. Some people act as if there was a free market for technologies, yet this does not exist as there are always economic interests involved."

This means the policy core belief "biotech does not serve societal interests" can be traced back to a generally skeptical worldview about technological progress and the way innovations are introduced in contemporary societies. This finding can then be tabulated in the following way:

World views Deep core belief	Policy core belief	Specified instruments Secondary aspects
New technologies are not per se beneficial to societies. There is no 'free market' in technical innovations.	Biotech does not serve societal interests.	Technology induced regulation rejected. Support of alternative agricultural technologies, especially as found in organic farming

## **How to separate discourse from belief?**

As we have only language sources at our disposal, this method still leaves us with the validity problem. How do we know that these “expressed preferences” are beliefs rather than just discourse? Sabatier/Jenkins Smith (1993) argue the following case:

- a) We look for consistencies in policy preferences over time. As Sabatier/Jenkins Smith argue: “In the policy subsystem there are reasonable incentives for representatives to adopt and maintain consistent beliefs because inconsistency can result in loss of credibility and support” (ibid: 243).
- b) The situation of the testimony/hearing situation (like personal interview) can give an indication for the validity of an argument (ibid). For instance, it could be reasonably argued that the private interview situation, as opposed to a situation of political confrontation, is less prone to strategic arguing also because responses can be instantly questioned. Interview records could then be compared to official texts as a way of tracing belief or contextual positioning/strategies.

## **Criteria for coalition building of advocacies**

According to Sabatier, advocacy coalitions (a) share a set of normative and causal beliefs and (b) engage in a non-trivial degree of coordinated activity over time (Sabatier 1998: 103). Coalitions are made up of different actors that can span a range of different institutions and groups. As the debate on agro-biotech involves many different areas, the categories for the identification of specific beliefs we get empirically from the texts (categories such as technology, nature, decision-making). As an indicator for relationships between actors we use common issued statements, frequent information exchange or personal relationships. According to the theory, new actors would join coalitions on the basis of shared beliefs. The aggregation of actors into an advocacy coalition is dependent upon restrictive criteria, they are thus relatively well defined and clearly bound and to be tested on this basis.



A precise reconstruction of a belief system and an advocacy coalition depends upon the empirical material and its validity. I do not claim to present such a 'true' reconstruction of beliefs, as it would be presumptuous to do so. The beliefs and coalitions identified remain social constructions, however, they serve our analytical purposes.

### **Criteria for policy change/learning**

The ACF has two primary forces of change: a) the values of coalition members and b) exogenous shocks to the subsystem. As the result of new information or external effects each advocacy coalition may revise its beliefs, primarily in secondary aspects, and their strategies. Major policy change requires significant external shocks to result in shifting resources and power balances between coalitions.

Given the basic tenets in the approach and the assumptions about coalition behaviour, certain guiding questions can be posed. What are the primary sources of change in the German case, external shocks or belief system change? How did a certain event (e.g. BSE) impinge on the power relations between the coalitions? Because of its focus on belief systems, the ACF leads us to focus on agency and its behaviour in the face of new situations. How did advocacies react when facing constraints and opportunities? How is a certain event (BSE crisis) used to undermine or promote specific beliefs? As a result of new information or external events, what aspects of a belief system changed through learning, and with what effects? What were the (new) strategies of the advocacies?

In case of change, the tiered approach to beliefs allows to focus on the depth of change in policy programmes/preferences. Have core attributes changed, or have secondary aspects simply been adapted to fit the new political situation? A change of policy cannot simply be judged by the words used. One needs to analyze how the *new terms* relate to the previously existing values, principles and beliefs of the respective coalitions. Only this allows judgement on whether policy change is mere discursive co-option or indication of 'real' transformation.

## **The policy broker**

The policy broker aims at facilitating a compromise between the competing advocacy coalitions. In order to identify the broker one needs to look for an actor or institution that *somehow* mediates between the coalitions. It will be asked: Who plays the role of the broker, how and with what effects for policy?

### **3.2.3 The discourse coalition approach**

#### **Discourses, metaphors and story-lines and where they reside**

In discourse analysis 'discourse' is both object of investigation and methodological instrument (Bublitz 2001). In this sense, for Hajer a discourse analysis is the *examination of the argumentative structure* as well as the *practices* through which these statements are made. The main methodological effort is in finding and tracing these argumentative structures in discourses, metaphors and story-lines deployed in the field.

#### **Discourse analysis through content and context analysis**

In order to investigate the argumentative structure Hajer identifies a set of steps. He suggests to begin with a general survey of the developments and positions in the field to be able to make a first chronology and to identify key events (Hajer 2003). Then follows a close analysis of texts to map out the discourses, metaphors and narratives that exist in the subsystem or public policy decision-making. Content analysis of different sources (texts and records) allows a detailed examination of the phrases and words that are used. In particular one needs to look for common textual patterns, common assumptions, common ways of reasoning, or common ways of mapping the field or judging the various actors involved. In discourse analysis it is most important to understand the usage of terms. Often the same terms can come to mean different things depending on how they are framed and deployed by different coalitions. Thus I used the methodological means of comparison in order to analyze the differences between coalitions in the reception of key concepts (e.g. the concept of 'consumer choice' or 'coexistence').

To get a better sense of the meaning and power of texts, one also needs to study the context within which something is being said. It doesn't just matter what is being said, but also by whom it is said, where and at what time. There is therefore an institutional component in Hajer's discourse analysis. Once discourses have been identified, it can be asked: what are the effects of certain discourses, how are these discourses related and how do they relate to power and dominance in the field (i.e. which aspects of a problem are included, which ones are left out in dominant representations)?

### **Criteria for the building of discourse coalitions**

In contrast to the ACF, discourse coalitions are based on language rather than belief patterns or common activities. A deconstruction of texts along the lines outlined above allows grouping of actors into specific discourse coalitions. Whether a coalition exists can then be decided, based on whether there is a common use of discourses and narratives and whether they engage in common social practices. Hence discourse coalitions are, in comparison to advocacy coalitions, much more encompassing, potentially involving many more actors. However, these actors do not need to be physically present or interacting; all they share is a common construct. Joining a discourse coalition is simply a matter of language and practice rather than a change in beliefs. Again, discourse is not so much connected to a particular person but to the practices within which they get (re)produced. As opposed to beliefs in the ACF, discourse is working more as a *structural environment* in which actors are functioning and acting.

### **How to study and judge the process of change?**

According to Hajer change and permanence come to depend on discursive reproduction or transformation. Hajer describes various discursive mechanisms that contribute to an understanding of policy change. This leads to a focus on the following:

'Events' are only constituted through interpretation, and interpretation in turn is dependent upon the *structure of the discursive field*. Discourse can thus explain why the response to

a set of conditions (e.g. mad cows) has taken the form of X rather than Y. We need to ask: What are the discursive dynamics around BSE? How did agriculture interact with the discursive field of biotechnology? With what effects?

For Hajer, story-lines are the prime vehicles for change. The emergence of new story-lines can reorder understandings, change interests and (re-)position actors. Therefore we need to look for the *discursive interaction* between discursive coalitions, for the creation of new meanings, interests or proposals for policy solutions. What led to an actual reframing? What aspects were chosen, with what effects? How did actors and coalitions relate to it? What links were drawn between specific issues? And we must look for changes in the composition of discourse coalitions.

As an indicator of change we can investigate whether certain (alternative) discourses have been adopted by other actors/coalitions in the field (*discourse structuration*) or whether a discourse has successfully influenced policy-making/practices/institutional arrangements (*discourse institutionalization*). This means there is a need to check whether and how new concepts appear in policy.

### **3.3 The sub-questions**

In order to explain change and to judge the theories, the thesis asks two sub-questions. These questions will not be directly answered in the empirical sections, but summarized in the concluding chapter.

#### **How to identify strength and weaknesses of the two approaches?**

The theories will be judged according to the following criteria:

- Do they both work as interpretative lenses?
- How well do they explain the changes? Is one approach better than the other in terms of illuminating developments?
- What aspects of the story cannot be explained by one or either theory?

- Do findings contradict theory?

### **How to judge whether the theories are contradictory or complementary?**

- Are their explanations/assumptions contradictory, that is, are certain explanations exclusively confined to one approach (its either this, or that but it cannot be both?)
- Similarly, with respect to whether they are complementary, can one approach be used to go beyond the weaknesses of the other approach?

### **3.4 Interpretation and presentation of the results**

What I aim to do in this thesis is interpret a specific event and its political effects by using the categories that are provided for by two different approaches. I based my selection and interpretation on large quantities of empirical data. However, how the data was selected, the material reconstructed, and what kind of relationships and connections were eventually drawn is ultimately a result of a combination of my own interpretative ideas and those offered by the theories. Since the aim of the thesis was not to produce quantitative data on discursive repetitions, I was faced with the problem of having to constantly decide what (detailed) information is important for testing the theories - without forcing the data into the categories - and to justify on what basis I can uphold these claims. I used as much as I could the criteria offered by the two approaches, always with the research questions firmly in mind. However, this still left me with many decisions. Having sometimes struggled through this process I can surely confirm that in qualitative discourse theory, data selection and data interpretation cannot be neatly separated (Schwab-Trapp 2003). In comparison to Grounded theory (Glaser/Strauss 1967), questions are not posed in the beginning and worked off in the wake of the research process. Instead questions are being constantly reframed, and material re-read and there is a constant interaction between methods, theory and empirical data with the result that the shape of the thesis changes continually.

With respect to the presentation of the result, I faced a similar problem of having to somehow separate the descriptive/narrative and the interpretative part of the thesis (without messing up the chronological order). Being aware of the difficulties, I nevertheless chose to present the results in a sequence, presenting first a narrative section, which more closely follows the empirical texts and is rather descriptive. This is followed up by an interpretative section, which goes beyond the text and interprets the data using the questions and categories as selected from Hajer and Sabatier. There is thus some repetition because the same data is used twice and the theories do show some similarities. Yet I chose to take that risk in order 'to give both theories a chance'. For a better understanding and improved clarity, in some cases I used tables in order to show the results.

## CHAPTER FOUR

### 4. The 1990s: Productivist innovations and risks/alternatives

This chapter will focus on the period from the beginning of the 1990s up to 1998. In order to be able to understand the present changes and new dynamics in German GM policy it is necessary to go back to that period as it was during this time when the main regulatory features were set, the respective coalitions built and the practices and political spaces for the years to come were determined. The objective of this chapter is to capture the beliefs, central policy discourses and coalitions of the period by looking at the most important and illustrative events. The chapter will thus provide the basis for understanding the nature and extent of change of GM policy that is going to be explained in later chapters, and functions, so to speak, as the frame of reference. Using firstly Hajer's discourse analytical approach it will identify the main competing discourses, their respective story-lines and the coalitions that hold on to and constitute or are constituted by this framing of the issue. The period's events will then be examined in terms of Sabatier's advocacy coalition approach, focusing on coalitions that formed around specific beliefs.

#### 4.1 Policy narratives in the 1990s

##### 4.1.1 Regulating GMO safety and its promotion: the Genetic Engineering Act (GenTG)

The development of biotechnology regulation in Germany dates back to the 1970s. In 1978, German jurisdiction incorporated the US National Institute (NIH) guidelines on biotechnology regulation. It was twelve years later, in 1990, that Germany designed and agreed upon its own national law, the Genetic Engineering Act (GenTG). The law was the product of intensive and highly conflictive debates in the 1980s, triggered by events such as the birth of the first German test tube baby or the attempt by Hoechst to establish a plant for the production of human insulin using GM technologies. Also of importance in the 1980s was the battle against nuclear technology, which went along with the power of new

social movements and the rise of the German Green Party. However, instead of putting an end to political controversy the act perpetuated it (Gill 1995). The mere existence of the act acknowledged the fact that biotechnological developments were of a quality such that they needed special provisions, and yet the act equally declared that research and development should be fostered. The Genetic Engineering Act thus incorporated elements from the critical discourse of “uncertainty” by asking for risk assessments or public involvement. At the same time the act endorsed state support, thus fostering the debate on “modernization based on technological innovation”, which had already begun to take hold in the 1970s (Gottweis 1998). These twofold provisions of the GenTG read as follows:

- To protect life and health of humans, animals, plants as well as to protect the environment in its integrated setting (“Wirkungsgefüge”).
- To create a legal framework for the research, development, use and promotion of the scientific, technological and economic potentials of biotechnology.

Through the act, biotechnology was reduced to a regulatory problem and no longer called into question (ibid.). The critics feared that “rather than inhibiting the advance of genetic engineering, the efforts to regulate risk must be seen as an important move in facilitating the project of genetic engineering” (ibid.: 147). This fear was nurtured by the special provisions of the act: The risks of biotechnology were seen to lie in the area of health and environment, and it was understood that these risks could be managed through “scientific knowledge and technology”. The act thus used a technological, scientific framing of the risks, without addressing any of the social or ethical hazards that biotech opponents tirelessly stressed. Risks and damage were okay – the applicant was granted a right to approval - as long as they were “acceptable”. The Ministry of Health (BMGS) was put at the center of regulation (an institution that was said to have friendly relations with industry) instead of the Ministry of Environment (BMU). The definition of risks was left to a small circle of experts, the Central Advisory Committee for Biological Safety (ZKBS), which was dominated by molecular biologists.



The act thus mirrored the split in society with respect to the acceptance and support of the technology. The groups supporting and rejecting biotechnology were basically diametrically opposed. The coalition of the supporters was led by the scientists, involving leading research institutions, such as the German Research Society (DFG) and the Max Planck Society (MFG).<sup>5</sup> This group was mainly challenging the need and rationale of a law because they feared massive restrictions on their fundamental right to “freedom of research”. Industry circles initially spoke out against the law, but later gave in and supported legislation on the grounds of creating a “reliable legal framework” for innovation while promoting social acceptance. Parts of the German regulatory system, such as the Ministry of Research and Technology (BMFT) and the Ministry of Health (BMGS) were also amongst the biotech supporters, as were many members of the liberal/conservative government and parts of the social democratic opposition. The anti-biotech movement was a broad coalition made up of environmental groups, women’s groups, groups of disabled people, religious groups and critical research institutions such as the Öko-Institut. This group was supported by the German Green Party.

#### **4.1.2 Risk framing and conflict handling: The WZB technology assessment procedure (1991-1993)**

As mentioned above, a genetic engineering bill was intensively debated during the 1980s. At the end of the decade however, due to a series of events, the legislative process picked up speed and the law was passed relatively quickly by parliament. The opposition criticized the legislative procedure as it did provide neither the space nor the time for discussion of questions that they deemed to be fundamental. Instead with the law they claimed that “a bureaucratic procedure replaced the necessary socio-political decision-making process” and that “biological risks were negotiated behind closed doors” (Spelsberg 1990: 32). With respect to ongoing opposition and critique, throughout the

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<sup>5</sup> The big German chemical and pharmaceutical industry were late entering the field of biotechnology and thus had to first decide where their interests lay. Dolata gives three reasons for that. First, late efforts to systematically combine basic research with product application. Second, an underdeveloped financial system with respect to venture capital products and a German research community critical towards commercialization. Third, industry itself was relatively oblivious and arrogant towards the developments (Dolata 1996: 113).

1990s regulators followed a “duck and cover strategy” (Hampel et al. 2001: 202) and kept the volume of political debate to a minimum. A means to accommodate the public protest and to channel the hostile debate was seen in the establishment of a few technology assessment procedures, of which the “Technology Assessment Procedure on Herbicide-resistant Crops”, organized by the “Wissenschaftszentrum Berlin” (WZB), a public research centre, was the most prominent.<sup>6</sup>

The WZB TA -procedure was organized as a participatory, discursive procedure, which involved some sixty participants representing a range of scientific, business and environmental groups and public bodies. According to the organizers the “participants in the procedure were put together so as to reflect the interests and the positions of the ongoing political conflicts over the new technology in Germany” (van den Daele et al. 1997: 1). However, against these political claims of openness and neutrality of the TA procedure, biotech opponents were expressing their doubts. First they criticized the narrow framing of the subjects to be discussed. The WZB TA began with the question “whether uncertainties with respect to the properties and behaviour of plants produced by genetic engineering can be distinguished from uncertainties due to natural processes which occur in all plants” (ibid: Foreword). In this way the relevant issues to be discussed were narrowed down to aspects of rational, sound scientific arguments about the technology’s *relative* safety while the question on alternative future concepts for plant protection/weed control and agriculture in general could no longer legitimately be raised (Gill 1993).

In addition, the WZB procedure was only looking at risk scenarios built on plausible causal risk hypothesis, while the debate about “unknown or specific risks” was relegated to the realm of speculation (von Gleich 1996). On the basis of these assumptions, the organizers concluded that there was no empirical evidence for special risks (van den Daele 1996).

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<sup>6</sup> At the Länder level, two other extensive public discourse initiatives on GMOs should be mentioned: The Academy for Technology Assessment in Baden-Württemberg, commissioned by the government of Baden-Württemberg, between 1993 and 1995 conducted a combined procedure of expert discourses and public forum. The Protestant Academy Loccum conducted between 1995 and 1996 a discourse scheme commissioned by the government of Niedersachsen. Between 1994 -1996 there was another private dialog between Unilever and BUND (FoE Germany).

This narrow, scientific-technical, evidence-based framework of the WZB procedure was thus perceived as politically biased by biotech opponents. As a result, the WZB procedure, constructed as a means for appeasement and mediation between the opposing camps, failed. In the eyes of biotech opponents the TA procedure was a mere public relations exercise for increasing social acceptance of an elsewhere-decided technological development (Gill 1993). In the end, the biotech opposition walked out of the process, while the organizers declared the technology to be safe ("no special risks"). Industry went along with field trials.

#### **4.1.3 Deregulation, innovation and competitiveness: The "Standort" debate**

Shortly after the legislation had been passed by parliament and regulation started to have effects on implementation practices, the debate about regulation was brought up again, this time, however, from biotech proponents. Two issues began to dominate the political debate that finally led to the relaxation of approval criteria of the Genetic Engineering Act in 1993. First there were the scientists, who criticized what they claimed as disproportional "administrative hurdles" put up by the law. As biotechnological research took place in a relatively regulation free environment before 1990, the new law did in fact impinge upon research practices by asking for approval procedures (mainly contained use) and public involvement. More importantly though, at the beginning of the 1990s biotechnology development was broadly discovered as an economic imperative. In the economic recession following German reunification, increasing importance was given to economic competitiveness and job creation. The life sciences, including biotechnology, were identified as "key technologies" contributing to the preservation of Germany's competitive strength as a business location ("Wirtschaftsstandort"). With this in mind, the GenTG was portrayed as being too restrictive for development and commercialization purposes and had thus to be "deregulated". Otherwise companies would have to leave the country in search for better conditions, in which case Germany would lose out in the "battle for global innovation and competitiveness".

In the new neo-liberal "Standort" discourse, industry and the sciences together pushed forcefully for the improvement of Germany's international business *and* research competitiveness and thus a deregulation of the act (Dolata 1996; Gill et al. 1998). The new economic issues pushed aside the debate about "uncertainties and risks" in biotechnology and had silenced the critical voices: "in political parties, the unions and in the media, all of a sudden economic experts were dominating the biotech discourse while environmental and social expertise had vanished from the scene" (Gill et al. 1998: 226). On the basis of these developments the conservative/liberal majority in parliament, with the support of parts of the social democratic opposition (backed by strong economic and science interests, and in a situation of a marginalization of critical groups) finally relaxed provisions of the GenTG by lowering safety standards, reducing approval criteria and curtailing public involvement. At the same time Germany increased its efforts to push for a deregulation of the Deliberate Release Directive on the European level (Bandelow 1997).

In the wake of the "Standort" discourse, public biotech promotion programmes had become an increasingly strategic field. While in the 1980s Germany was concerned about catching-up with international technological and scientific developments, biotech promotion in the 1990s was about gaining supremacy in the European and global competition for high-tech markets (Dolata 1996). Under the lead of the Ministry for Research and Technology (BMTF), the German "competition state" (Hirsch 1995) acted as a catalyst and coordinator for several well-funded biotech programmes.<sup>7</sup> These aimed at supporting public biotech research and infrastructure in order to improve the start-up and commercial activities in the sector and to foster co-operation between science and industry.<sup>8</sup>

During the 1990s, for German science and technology policy, biotechnology had become an area of highest priority. Biotech promotion was one of the main objects of the ministry's

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<sup>7</sup> For an overview on the ongoing initiatives see: (BMBF 2000).

<sup>8</sup> To mention just one of the funding highlights, the promotion programme called the "BioRegio Competition". This programme was aimed at improving the commercial activities in the sector and fostering co-operation between science and industry in a special region. The "BioRegio Competition" programme sparked intense activities and proved highly successful. In 1999 the number of start-up companies in Germany was higher than in any other European country (Hampel et al. 2001).

funding policies, while safety research only played a minor part in the promotion rationale. Over the years the two leading political parties, the Conservatives and the Social Democrats<sup>9</sup>, have continued to express their support for the technology on the grounds of its allegedly high economic potential and in the face of global competitive pressures and rising unemployment. This general line of biotechnology framing was kept even after the great political changes in 1998, when sixteen years of conservative/liberal rule were replaced by a coalition between the SPD Party and the Greens. However, green pressures eventually had an impact on the biotechnology policies of the country, as will be shown later.

#### **4.1.4 Alternative spaces of resistance: The turn to market strategies**

The "Standort" debate in the 1990s had pushed aside the risk and control problématique or delegated these themes into politically meaningless, albeit publicly supported, discourse projects such as the previously mentioned WZB technology assessment procedure. Additionally, the rhetoric of the "special risks of the method as such" was losing ground<sup>10</sup> and the battle over establishing an alternative political debate on societal trends, modernization or innovation was lost to the biotech industry and science interests.<sup>11</sup> Furthermore, in the 1990s the theme of biotechnology became increasingly differentiated and, depending on its application, i.e. medical or for food uses, differently perceived (Grabner et al. 2001). These developments together forced the German critic's scene increasingly onto the argumentative and political defensive.<sup>12</sup> As a result, the coalition of critics that was brought together against the legislative activities at the

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<sup>9</sup> The Social Democratic Party (SPD) does consider biotechnology to be a "key technology", which needs to be developed and promoted. However, with respect to agro-biotechnology the SPD does not have a common position. An ecological faction within the party stresses uncertainty. Furthermore there is a strong faction that favours consumer protection, restrictive labeling policies and risk research activities. Overall, however, there is no fundamental rejection of the technology as such to be found (Behrens et al. 1997).

<sup>10</sup> Even within the critics scene voices of conditional acceptance were getting louder (Bandalow 1999).

<sup>11</sup> Critics from within the critic's camp have blamed the biotech opposition for having too stubbornly focused on the special risk problématique and thus missed out on developing alternative images and frames with which to counter the mainstream developments (Gill 1994).

<sup>12</sup> It should also be mentioned that the Green Party missed reelection to parliament in the federal elections in 1990. This way the critics fraction lost an important coalition partner that could bring to bear pressure on the constitutional/political arena (Schneider 2001).

beginning of the 1990s slowly broke apart and was replaced by issue-related, local and partly ad-hoc initiatives (Hoffmann 1997; Dolata 2003).

For the biotech critics, by the mid 1990s the battle against biotechnology in the regulatory sphere was lost and a biotechnology start-up boom, most of all in the area of medical applications, was on its way. Yet, apart from ethical debates, such as on cloning or reproductive medicine, public protest in Germany was generally shifting towards agricultural biotechnology and its food uses. By the middle of the decade, legislative procedures concerning GM labeling and 'Novel Foods' taking place at the European level and new material developments opened up new opportunities for resistance strategies, campaign activities and coalition building. The year 1996 marked a watershed for strategy and debate in the realm of agro-biotechnology when the first GM soya-beans reached Hamburg harbor and transgenic crops finally entered the German market. These first imports of GM crops increased the awareness of genetic engineering in everyday life and made its products at last tangible (Hampel et al. 2001). However, even though the products were now present, they could not be identified as "genetically modified" as they were placed on the market without being labeled as such. This situation of commercialization in the face of high consumer rejection in the field of agro-and food biotechnology finally caused a shift in the oppositions and the debate's focus from safety regulation to market strategies.

This lack of labeling regulation, together with the ongoing discussions on labeling and Novel Food regulation at the EC level sparked an intense labeling debate in Germany, which involved various actors and regulatory initiatives (Dreyer/Gill 2000). There was a widespread consensus on the need for "comprehensive labeling", however, this 'common' position entailed very different motives and demands. Consensus resulted from the concerns about "consumer acceptance" and "free consumer choice". To quote the liberal/conservative Government in a press release in 1995: "food innovations cannot be pushed through against the will of the consumer" (quoted in Behrens et al. 1997: 55). Labeling was thus considered to be necessary to enhance "consumer trust" and to make a

market for these 'useful products' possible.<sup>13</sup> At first GM opposing groups were not in agreement on whether to engage in the labeling debate out of fears that this would be looked at as a final GMO acceptance (Riewenherm 1997). After this initial hesitation, however, the opposition groups entered the debate, unsurprisingly, placing a different emphasis on the consumer and choice issue. "Informed consumer choice" was pronounced as a means against "clandestine commercialization". Comprehensive labeling was here seen as a basic prerequisite to keep the market for GM products as restrictive as possible and to create the conditions for the establishment of a non-GM food market.

The differences in debate were reflected in the opinions about the level of urgency and the necessity for taking action to protect the consumer against unlabeled, 'deceptive' products. Biotech critics and the political opposition, the Green Party and the SPD Party, demanded a special German law to be implemented immediately. A parliamentary initiative, however, remained unsuccessful because the government favoured voluntary labeling and pointed to up-coming regulation on the European level, which would deal with the labeling issue (Behrens et al. 1997, 2000). Initiatives for closing gaps in European regulation with respect to "without genetic engineering" or negative food labeling were eventually taken up at the federal level, partly as a response to strong and media-effective pressure-group activities at the Länder level.<sup>14</sup> Interestingly, the labeling initiatives in Bavaria, "Gentechnikfrei aus Bayern" (GM-free from Bavaria), was linking the objective of consumer information with that of regional preservation of the "Standort". In the draft law initiative: "The aim of the law is the preservation and support of Bavarian agriculture, seed, food and feed production as well as the information of the consumer" (quoted in

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<sup>13</sup>In a publication from the agricultural ministry of 1997 consumer protection was primarily associated with questions of consumer health. The question of consumer choice is mentioned but not made central. Yet reading the publication one can tell that consumer choice is more about making GM products acceptable than providing differentiated public information. For instance, the question whether new health risks are to be expected by the use of GM food is blandly answered with no. Similarly the question whether there are special allergy risks caused by GM food is equally answered with a straight no (BML 1997). However, the tone of voice in the agricultural ministry's publication is rather restrained in comparison to a publication of the Ministry of Education and Research from the same time period. In the BML publication at least most of the usual critical points of the debate are taken up, even though the answers are problematic. The BMBF publication (title: Why we need biotechnology), in contrast, does not mention most of the objections brought forth, and if it does it dismisses them as irrational (BMBF 1996).

<sup>14</sup>Two initiatives for referendum were started in Bavaria and Niedersachsen. The Bavarian initiative ended up not getting enough votes to force the referendum. However the activities sparked public interest and media coverage and can at least partly be made responsible for the government's proposal for "non-GM" labeling regulation (Dreyer/Gill 1999).

Mühlenberg 1997: 10). Non-GM production, consumer information and food transparency was thus framed as a local "Standort" advantage.

More importantly though, in parallel to the labeling initiatives larger environmental NGOs, such as Greenpeace Germany, started to pursue consumer oriented strategies to inform the public about the GM-policies pursued by food processors and retailers.<sup>15</sup> This consumer information practice was combined with a debate on food safety, with the emphasis placed on the "un-naturalness" and (thus) "un-healthiness" of "Gene-food".<sup>16</sup> Through these initiatives and activities powerful economic actors of the food chain were drawn into the conflict. In particular the retailers, which are closest to the consumer and most vulnerable to consumer boycotts, supported far reaching (process) labeling and restrictive product stocking policies, such as GMO exclusion from own brand products.

These pressures to exclude GM ingredients were not exclusive to Germany, but operated across Europe (Levidow/Bijman 2002). However, the special German situation of hesitant and at times contradictory government policy (Behrens et al. 1997), in combination with a particularly hostile marketing situation allowed the German retailers in particular to play the role of the "advocates of consumer interests" (Behrens 1998: 17). In this situation the biotech and food industry was increasingly running the risk of losing credibility by denying consumer choice through an ongoing rejection of labeling and the argument of "irrational consumers". As a response to the difficult marketing situation, the biotech proponents increased their efforts to improve public relations<sup>17</sup> and began to join forces via the establishment of the "Gesprächskreis grüne Gentechnik" a public-private round table on plant genetic engineering. Thus, against the background of commercialization, a fragmented opposition movement could nevertheless achieve a great deal of success by

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<sup>15</sup> Up until 1996 Greenpeace International had not been engaged in the biotechnology debate. In spring 1996 Greenpeace Germany started the campaign "Greenpeace-Shopping net", a Greenpeace consumer service. In the context of this campaign, Greenpeace provides information lists on the Internet on retailers and producers stance on GM sourcing and labeling policies.

<sup>16</sup> Friends of the Earth Germany, together with the "Gen-ethisches Netzwerk" already started an anti "Gene-Food" campaign in 1991. The running line was "Food from the laboratory? Naturally not!" This way, Gene-food was portrayed as unnatural and artificial, removed from everyday knowledge, practice and control. This campaign was at its peak in the years 1997/1998.

<sup>17</sup> The food industry thus started an "information campaign" ("Aufklärungskampagne") with the aim of convincing consumers of the benefits of biotechnology, and to deliver 'objective' information that could counter the "fear campaign" of biotech critics (Mühlenberg 1997a).



using thematic campaigns, food safety and quality language and specific targeted strategies, such as the Greenpeace shopping net activities. As Dreyer and Gill (2000a) suggest, in Germany these market developments have brought more pressure to bear on the technologies developmental perspectives than regulatory blockades have.

#### **4.1.5 Institutional practices: Review of approval procedures**

As could be shown above, the 'fate of agro-biotechnology' in Germany in the 1990s seemed to be less decided in the realm of safety regulation than in the process of market introduction – a dynamic which was for the most part not anticipated by the developers and proponents. Despite the developments in the market place, the German government stuck to the rhetoric of biotechnology as a "key technology" and addressed public skepticism by joining in with information campaigns and half-hearted labeling activities.<sup>18</sup> Officially, however, the Competent Authority (CA) has not seen itself as a mediator of conflicting interests but as a politically independent institution that takes decisions on the basis of the law and sound scientific expertise (Dreyer/Gill 2000). It was on this basis that the German CA gave approval to several GM crop applications. In order to show how the German CA interpreted the implementation of the Genetic Engineering Act it is informative to look into its approval decisions on GMO crops. However, before turning to the actual decisions it is necessary to introduce the institutional set-up and legal provisions as foreseen in the act.

#### **Box 1: GenTG - Institutional set up and legal provision**

In Germany until the year 2004 the Ministry of Health and the Center for genetic engineering at the Robert-Koch Institut (RKI) was assigned the role of the national Competent Authority in GMO release and market approval. In case of GMO field trial approvals two other units, the Federal Environmental Agency (UBA) and the Federal Biological Research Center for Agriculture and Forestry (BBA) needed to consent; in case of market approval these units only needed to be consulted. With regard to GM food approval, responsibility was shared between the RKI and the food safety agency (BgVV) of the Ministry of Health. In its decisions on the risks in genetic engineering the RKI is

<sup>18</sup> For instance, the Competent Authority, the Robert-Koch Institut (RKI) participated in the cooperative initiatives of the biotechnology industry in the "Gesprächskreis grüne Gentechnik".

furthermore consulting the Central Advisory Committee for Biological Safety (ZKBS) a specifically dedicated scientific advisory body (see Table 8, p.161).

The legal provisions for approval decisions stated in the act - the core questions to be answered in the risk assessment - read as follows: In principle approval for release into the environment must be granted if:

All required safety provisions are met according to the present state of the art in science and technology.

According to the state of the art in scientific knowledge and proportional to the purpose of release<sup>19</sup> unacceptable harmful effects to the goods stated in Art.1 (health and environment) are not to be expected." (For market approval only the last condition must be fulfilled.)

The Genetic Engineering Act – as well as the EU Deliberate Release Directive - leave crucial questions open to interpretation and hence open up the terrain to normative and political judgements. The act neither defines a level of protection (what is "unacceptable harm") nor does it give guidance on the "state of the art in science" nor does it give information on an 'appropriate' risk philosophy to use (what uncertainties to consider). It left these decisions to scientific experts and administrators who then by exercising their specific risk practices decide upon a more innovation-friendly or protection-based interpretation of the law.

Critical assessments of the German approval decisions state that the CA interpreted the Genetic Engineering Act as requiring assessment of only narrowly defined "adverse effects" (Sauter/Meyer 2000; Vogel/Tappeser 2000). This is mainly due to the fact that RKI regarded conventional agricultural practices as a normative baseline for evaluating the effects of transgenic crops. That is, as long as GM crops did not pose any higher or additional risks compared to conventional ones, its effects were deemed to be acceptable. For example, with respect to Bt maize<sup>20</sup>, the RKI judged it to be acceptable if Bt became ineffective for controlling pests, since the development of resistance is considered to be a

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<sup>19</sup> This provision suggests a weighing of purpose and possible damage as a criteria for approval. However, in the practice of risk assessment this clause has not been applied in any of the approval cases. So far regulators always found a way to reduce the risk by imposing specific safety measures, that is, there was no need for a risk-benefit analysis.

<sup>20</sup> Bt maize contains bacterial genes to produce the Bt (*Bacillus thuringiensis*) toxin, which protects the plant from certain pests, such as the corn borer.

classic agronomic problem and not specific to GM plants.<sup>21</sup> Similarly, the RKI disregarded indirect or long-term effects of herbicide use that could result from a widespread application of herbicide tolerant crops (e.g. effects on biodiversity). Only in the case of a development of multiple herbicide resistance has the RKI in the past shown concern, but again, this has not been identified as an ecological but rather as an agronomic problem.

Thus by basing its decision on a narrow interpretation of the relevant regulation, the Competent Authority defined what uncertainties to consider, what to count as an adverse effect and to what extent such effects were deemed to be acceptable. By choosing conventional standards in agriculture as a baseline, the CA thus excluded the broader environmental concerns as underlie the concepts of sustainability and biodiversity in agriculture. In this way the RKI did not accommodate demands and critique raised by GMO critical groups, namely to request evidence that a new transgenic crop should provide an environmental improvement over conventional methods or should not exclude other potential options of more sustainable farming practices. For critics this involves not just looking at the trait as such but considering the plant in the practical context of its application, including indirect effects. Instead the authority claims to approve in isolation, keeping the referential frame narrow, meaning “scientific”.

This is not to say that there were no tensions between the regulatory bodies involved in GM approval. As mentioned earlier, the Ministry of Environment (BMU) had lost the struggle for the status of being the leading department in the legislative process at the beginning of the 1990s (Gottweis 1998). The one concession made to the ministry was its integration, together with the Federal Biological Research Center for Agriculture and Forestry (BBA), into the process of GM authorization. In fact, the Federal Environmental Agency (UBA) had in the past advocated for a different, more precaution-based approach in risk assessment. For instance, the UBA advocated the consideration of secondary effects in risk assessment. Furthermore, opposed to the RKI, it considered pest resistance (in case of Bt) to be an environmentally relevant issue as it implies the loss of an

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<sup>21</sup>In the same case the Austrian competent authority rejected approval because it considered the development of resistance to be an adverse effect, which would jeopardize agricultural options in organic farming.

environmentally friendly pesticide, and it had pointed to insufficient knowledge, for example with respect to the effects of Bt on non-target organisms (Dreyer/Gill 2000). The UBA thus favoured a broader interpretation of the relevant regulation, taking into account sustainability considerations.<sup>22</sup> However, equal weight in expertise between the different agencies involved was only foreseen in the case of field trial release. In market approval the UBA needs to be consulted, though there is no requirement for consent. This way these more environmental precaution-based schemes remained marginalized in German GM approval and regulatory practice (Boschert/Gill 2004).

Hence while in other European countries the public conflict was trickling down to the regulatory level and former initiatives to deregulate the EU Directive 90/220 were gradually turning towards the opposite, meaning even stricter regulation, German government policies and regulatory practices remained mainly unaffected. Even though the German Competent Authority had expressed some reservations about some marketing applications it had never rejected any of them on the grounds of safety concerns (Vogel/Tappeser 2000). At a time of a growing pan-European tendency to put approval decisions into question, as, for instance in the case of Austria, France or Denmark, Germany vehemently pushed for the implementation of Europe-wide authorizations (Seifert 2000; Heinrich Böll Stiftung 1999). As could be clearly understood from the practices and debates: In the 1990s the German government wanted the technology to be developed and introduced even against widespread (European) public disapproval. Consequently, Germany was not amongst the supporters for the de-facto European moratorium on GM crop approval.

#### **4.2 Understanding policy development in the 1990s**

In the following section, Hajer and Sabatier's approaches will be used to look more analytically at the narrative. Key concepts of both authors will help in illuminating specific aspects of the policy developments in the 1990s.

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<sup>22</sup> Consequently, the environmental agency also follows a different approach in biosafety research. For an improvement of the knowledge base in terms of GMO releases it advocates for more eco-systemic, uncertainty based safety research.

#### **4.2.1 Discourse and story-lines as in Hajer**

Chapter two shows that in Hajer's discourse analytical framework it is discourses and story-lines that are considered to be crucial for an understanding of the policy process. Discourse refers to the concepts, ideas and categorizations that are used in a particular practice while story-lines are the narratives that link particular elements and provide the symbolic references to suggest a specific understanding of a problem. Most importantly, story-lines - the principle 'thrust of an argument' - constitutes the basis for a coalition, or respectively excludes certain actors and practices. Using these categories the German GM policy debate in the 1990s can be represented as a struggle between a variety of competing discourses and story-lines. The mobilization of specific story-lines and the reconstruction of the dynamic of the discourse coalitions can thus show how the definition of the problem evolved, and what the impacts were on regulation and practices.

Table 2: “Innovations and Standort” discourse coalition

Story-lines	Discourses
<i>“Narratives on reality through which elements from many different domains are combined. Provide actors with a set of symbolic references and suggest a common understanding.”</i>	<i>“Ensemble of ideas, concepts, and categorization that are produced, reproduced and transformed in particular practice.”</i>
“Sound science” “There is no evidence of special risks” “Decision should be science based and not informed by politics” “Decision should be left to experts (scientists)”	Scientific objectivity
“Biotechnology is nothing new” “Products are substantial equivalent” “There are no special risks”	Normalization
“Biotechnology is a key technology for the German economy” “Biotechnology will create jobs” “Biotechnology can solve agricultural problems” “Biotechnology can serve consumer interests and create new products”	“Standort” debate Technological modernization
“Let the market decide” “Excessive regulation hinders innovation and progress” “We need a reliable legal framework for innovation” “Over-regulation” “Over-bureaucratization”	(Market) Liberalism
“Innovations cannot be pushed through against the will of consumer” “Consumer choice will enhance consumer acceptance” “Consumer choice needs to be real”	Consumer choice
“The public just does not know of the potential benefits” “Rejection rests on irrational fears and misleading information” “Fear campaigns”	Irrational public

**Table 3: “Risks therefore alternatives” discourse coalition**

Story-lines	Discourses
“GM crops threaten nature” “We do not know enough” “Biotechnological interventions have a new quality and pose special risks” “Risks should not be taken if there are alternatives”	Uncertainty Precautionary Principle
“Genetic treadmill” “Biotech perpetuates problems and causes new problems” “High-tech lifestyles” “Decisions on technologies should be transparent and decided democratically”	Technological pessimism/control Modernization critique
“The market is hierarchical and unfair” “Fundamental questions about such technologies cannot be left to the market” “Citizens not consumers should decide”	Market rejection
“Clandestine commercialization” “Consumer deception” “Consumer interests are not respected”	Consumer choice
“Biotech does not serve societal interests and needs” “Environmental protection is neglected. There are no benefits foreseeable” “GMOs are about profits for industry”	Societal need
“Technicians reconstruct our food” “Gene-food is unnatural” “Genetic pollution”	Food/Nature

**The 1990s - a wide variety of story-lines and risk discourses**

As Tables 2 and 3 show, in the German debate over GMOs in the 1990s a wide variety of story-lines and discourses have been deployed. Grouped according to the story-lines and discourses used, two competing discourse coalitions can be distinguished. For each coalition we can identify a small number of key discourses, which are comprised of specific combinations of story-lines. Some of the key story-lines of biotech proponents are: “there are no special risks inherent in biotechnology” or “biotechnology is a key technology for the German economy”. In contrast, there are arguments put forth by the opponents, such as: “biotechnology has a new quality and entails uncertain risks” or

“consumers have a right to informed choice”. These story-lines can either stand alone or can be combined with one another, for instance, when arguments of “scientific uncertainty” are linked with “modernization critique”, or the argument of “sound science” is linked with that of the “irrational public”. According to Hajer, a specific linking may be done because there is an affinity between the story-lines or for tactical or strategic reasons. Taken together these arguments, used in the struggle for discursive hegemony, delineate the discursive space within which the GM controversy was played out in Germany during the 1990s.

### **Story-lines in the formation of the main coalitions**

For Hajer, story-lines, the specific use of metaphors, language and ideas, form the basis of a coalition. Story-lines allow for overcoming fragmentation between different beliefs and interests and suggest a common understanding of a certain issue. This notion works well to explain coalition building at the beginning of the 1990s. Here we were looking at two antagonistic coalitions, which themselves consisted of groups ranging from science to environmental and including women's or animal protection as well as religious or industry interests. The coalitions were so broad, especially on the opposition side, that in order to hold together they needed a powerful common frame. This could be found in the discourses on “uncertainty” and “technology pessimism/control” which dominated the anti-biotech coalition in their common political project. In case of the biotech proponents the common will ‘to make biotechnology happen’ could relate the discourse of the scientist's “freedom of research”, to the industrialist's focus on “reliable legal frameworks” and to pro-biotech politicians' stances.

### **The power of referential frames: the “Standort” discourse**

Discourse and story-lines not only play a central role in bringing together a diverse set of actors and practices, but discourse can also change an understanding of a problem and this way contribute to policy change. This notion is useful in the case of the neo-liberal “Standort” debate, because it could explain the strong convergence between the



researchers and industry and the building up of a powerful 'deregulation' coalition, including the political opposition. In framing technology regulation as a "Standort" topic, the regulation of biotechnology was up-graded to a 'hard economic issue', impossible to ignore in times of economic recession. The discourse of "over-bureaucratization", as led by the scientists, delivered a rationale for poor economic performance. But more importantly, with the "Standort" debate these concerns became more than just a matter of selfish researcher interests, becoming a national concern. "Over-regulation" and the "Standort" question thus closely linked the domains of research and the economy and created a common bond between the scientists and the industrialists. Even though the causal relationship between (over-)regulation and national competitiveness was contested, the combination/affinity of the elements reified a very common anti-state story-line of the neo-liberal discourse which was very prominent at the time (Barben 1997a). The story-lines thus "sounded right" and provided a powerful and legitimate rationale for deregulation. This way even "exaggerated risk claims" and acceptance problems within society became framed as "Standort" disadvantages.<sup>23</sup>

### **"Consumer choice" – or how new framings bring in new aspects and dynamics**

The power of discourse can also be shown in the case of the newly arising "consumer choice" discourse. With this framing entirely new aspects came into play which again had their impact on coalition building and policy development. By the time it hit the market, biotechnology had evolved from a terrain of technology regulation to the realm of tangible food regulation, thus triggering a whole set of new concerns by opening it up to new images and interests. At a time of a growing significance of consumption and when the provision of food becomes increasingly problematized (and politicized) "food quality" and "consumer choice" take on a new meaning. Additionally, with the rise of own brand labels and structural changes in the food chain, retailers increasingly take on responsibility and economic risks in the provision of foods (Marsden et al. 2000). The new framing of GM

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<sup>23</sup> Critics within the critic's camp have blamed the biotech opposition for having put the case for this kind of economic argumentation. The critics themselves, so the argument goes, have reified the mainstream economic arguments and a technical-determinist logic by using these in their counter-discourse to discredit the aims of industry. This was now back-firing in the "Standort" debate (Barben 1997; Gill 1994).

products as matters of “consumer choice” and “consumer health” thus brought a new and powerful economic player into the GM opposing discourse coalition, namely the retail chains.

### **Everybody talks about choice – the condition of discourse structuration**

As shown, the power of the new discourse was very wisely anticipated and successfully placed by the NGOs, especially by Greenpeace. This new advocacy of a solution to the GMO issue was, however, not uncontested, as the initial hesitation on the side of the biotech opponents shows. Yet “consumer choice” was pervasive and came to be employed by *both* antagonizing coalitions - albeit using very different story-lines. This is not of much surprise since “consumer choice” is, after all, part of a neo-liberal rhetoric and thus difficult to counter by GM supporting liberal interests (Gabriel/Lang 1995). The food industry, for instance, reluctantly acknowledged that the concept of “consumer choice”, which it otherwise espouses, also applied in the case of GM products. Thus for the food industry the concept of “consumer choice” became a balancing act between being openly supportive of biotechnology while accepting the right of the consumer to choose, and at the same time suggesting that in the case of GMOs the consumer wasn't really qualified to make a rational choice (“irrational consumer”). In this case one could say that the discourse of “consumer choice” had become hegemonic and that the condition of *discourse structuration* existed, because actors were required to speak the same language to keep their credibility. Therefore, as Hajer's approach nicely shows, new story-lines have not only the power to change the meaning of specific issues, but they can also redefine economic interests, as happened in the case of the retailers. In this way discourse could drive a wedge between the actors within the food chain, disrupting patterns of formerly common political and economic interests (Behrens 1998).

### **Scientific discourse as internally related to social practices**

As stated by Hajer, discourse is internally related to the social practices in which it is produced. Practices in turn reinforce discourses and specific story-lines. The science-

politics interface can be regarded as one of the most crucial sites of practices in the conflict on biotechnology through which discursive power is exercised. As shown in the narrative, the Genetic Engineering Act was built on a "scientific-technical framing" of the subject. This principle narrow framing of the issue was confirmed in the WZB technology assessment procedure, where biotechnology was dominantly phrased as a question of "relative technological safety", subject to scientific rationality. Accordingly, when special risks were not foreseeable, the result (and the logic) of the WZB procedure was that the scientific risk issue was considered to be dead and the "riskification" of other issues portrayed as politically motivated. The same logic was applied in the case of the implementation of the Genetic Engineering Act. Again, in the approval procedure a discursive boundary was drawn between 'science' and 'politics'. In choosing a narrow frame of reference, for instance conventional intensive practices in agriculture, it delegated socio-economic concerns to the realm of "other legitimate factors", declaring these as irrelevant in risk assessment.

### **Discourse – dominance & marginalization and its effects**

The WZB technology assessment procedure, as well as the GMO approval procedure, can thus be interpreted as examples for showing how a dominant, institutionalized risk discourse is marginalizing other, explicitly socio-cultural frames, for example on types of agriculture or paths of modernization. As the WZB procedure impressively shows, by drawing a strict boundary between scientific and non-scientific arguments this framing portrayed the biotech opposition as being ideologically motivated while it declared its science approach as value-free (Gieryn 1983; Levidow/Carr 1997). Such a framing thus authorizes scientific expert knowledge whilst de-legitimizing other 'non-scientific' demands. Furthermore, the treatment of uncertainty, as in allowing only plausible cause-effect hypotheses and the assumption of *relative* damage, allow for the simplification of the assessment procedure and ultimately normalize risks in biotechnology. Consequently, as the WZB procedure and the German approval practice show, such a type of framing makes negotiations and the mediation of underlying social conflicts difficult - if not

impossible - and thus contributes to the polarization and alienation of the discursive coalitions. In Germany, powerful institutions such as the Ministry of Education and Research or the Competent Authority RKI and its scientific advisory body ZKBS, reproduce the discourse on “sound science”. The discursive approach shows the consequences of such framings in terms of who is allowed to speak, decide and act, and on what grounds, in the realm of biotechnology.

#### **4.2.2 Advocacy coalitions and belief systems in Sabatier**

To recall, according to the ACF it is assumed that actors act on the basis of beliefs, and that they form relatively unified coalitions in order to push through their ideas. The policy process can thus be understood as a process of competition between coalitions that advocate their specific belief systems. Policy core beliefs are the fundamental glue that keeps a coalition together. These beliefs are only to a certain extent changeable. Policy change and developmental dynamics are explained by either belief system change or through external factors. This section will show how belief systems determine the policy framings and the actions of the coalitions involved in the biotech subsystem during the 1990s.

**Table 4: Belief system 1: "Innovation and Standort"**

<b>World views</b> (Across all subsystems)	<b>Policy core beliefs</b> (Subsystem-wide)	<b>Secondary aspects</b> Specified instruments
New <b>technologies</b> improve the quality of life. Society benefits from technological progress and innovations.	Biotech is useful and will help solving problems and addressing needs.	Biotech support programmes: Biotechnology 2000 BioRegio Competition "GABI"
<b>Risk and uncertainties</b> can not stop societies from advancing. Risks need to be taken.	Biotech does not pose great additional risk, if anything benefits outweigh risks.	RA as only regulatory problem. Provisions in GenTG: "acceptable damage"
Risks are fully describable by the use of <b>science</b> .	Science can provide a common and objective basis for decisions about risk.	"Sound science" GenTG: "state of the art in science and technology"
Not everybody's <b>voice</b> can and should be heard.	Decision should be left to experts.	Support of expert based decision-making structures (ZKBS), opposition to widening participatory basis.
<b>Markets</b> are naturally evolving, self regulating, efficient institutions	Excessive state regulation is inhibiting market forces. Biotech should not be 'over-regulated'.	Regulation of biophysical risks only Product-based labeling schemes.
<b>Trade</b> is beneficial to societies	Trade barriers should be minimized.	High thresholds for adventitious presence.
<b>Consumer choice</b> is a valuable concept	Consumers should be able to choose, however, choices must be real and not artificially created (GM/non-GM) or misleading (GM as unsafe).	Product-based labeling scheme finally accepted.
<b>Agriculture</b> is land cultivation for the sake of human needs.	Agro-biotech is a <i>method</i> used in different types of land cultivation. Agro-biotech improves agricultural methods.	Support of biotech research and application
<b>Nature</b> will always find ways to balance itself.	Biotech does not jeopardize nature.	Status quo of intensive agriculture as baseline for damage acceptance.
<b>Precaution</b> is fine, however should not be used to suffocate innovation.	The fact that biotech products need approval is proof of precautionary approach.	GenTG: "Approval must be granted if...conditions are fulfilled"

**Table 5: Belief system 2: “Alternatives instead of risks”**

<b>World views</b> (Across all subsystems)	<b>Policy core beliefs</b> (Subsystem-wide)	<b>Specified instruments</b> Secondary aspects
New <b>technologies</b> are not per se beneficial to societies. There is no ‘free market’ in technical innovation	Biotech does not serve societal interests.	Technology induced regulation rejected. Support of alternative agricultural technologies, especially as found in organic farming
<b>Risks</b> should not be taken if there are alternatives	Biotech is new and does pose unacceptable unforeseen risks	Uncertainties and lack of need justifies ban or at least high restrictions
Risks do not reveal themselves in the full by any <b>scientific method</b> .	Science cannot provide an objective basis for decision about risks in biotech. The “scientification” of the question serves to hide its political character	Selection of science criticized.
Every <b>voice</b> needs to be heard	Decisions should be taken democratically, that is demand for more transparent and open procedures	Demand for changing ZKBS composition and demand for broader public participation.
<b>Markets</b> are hierarchical and need to be regulated to work better	State regulation is needed and alternative food/agricultural markets need to be created	Support of alternative models in agriculture. Support of process-based labeling.
<b>Trade</b> and competition are hierarchical and hence lead to unjust results.	Environmental and social regimes need to have priorities.	
<b>Consumer choice</b> is a valuable concept	Consumer choice needs to be real! Consumers need to be given a choice to reject all GMOs.	Support of maximum declaration (labeling) and strategy of “stigmatization” (through campaigns, blacklists...)
<b>Agriculture</b> is more than land cultivation for the sake of human needs. Agriculture is also affecting nature and culture conservation. Agriculture needs to be socially and ecologically sustainable.	Organic and GM are not just different forms of agriculture but are based on overall different concepts. GM continues intensive agriculture.	Organic agriculture needs to be pushed – its potentials need to be realized, research priorities need to be changed.
<b>Nature</b> is a very delicate system, which can be irreversibly damaged by human intervention	There is a need to raise the environmental standards for new technological innovations.	Organic agricultural standards as baseline.
<b>Precaution</b> is indispensable to behave in a more environmentally friendly manner.	PP goes beyond the requirement for approval. PP allows including social and ethical factors to be taken into account.	Out of precaution biotech should be banned or at least strictly regulated.

## Beliefs as determining different risk frames

In the ACF, advocacy coalitions need to fulfill two conditions: they share a set of normative and causal beliefs and engage in coordinated activities over time. Looking at the actors and institutions existent in the period in question, there are two obvious coalitions that differ considerably over the appropriate form of biotech regulation. Those individuals and organizations comprising a coalition hold on to certain policy core beliefs and there are numerous indications that deeper, more fundamental worldviews are underlying these policy stances. As shown, the debate on biotech involves many different areas, such as technology, nature, and decision-making, and actors share a considerable number of different beliefs when forming an advocacy coalition.

When looking at Tables 4 and 5, it can be seen that both advocacy coalitions have distinctive and opposing belief structures. In belief system *one*, new technologies are basically welcomed and perceived as progressive and beneficial to society. In this sense risks need to be taken and these can be handled scientifically on the basis of expert knowledge. State regulation is looked at very critically, since it is perceived as hindering innovation, the market mechanism and international trade. Agriculture is viewed as a method for land cultivation for the sake of human needs and it is believed that in case of negative impacts on the environment nature will find ways to balance itself. In sharp contrast to these ideas stands belief system *two*. Here new innovations are not principally perceived as beneficial. Risks should only be taken on the basis of a societal consensus and in case there are no alternatives. Science does not have the status of a source for objective knowledge about risk judgements. It is believed that state regulation is necessary since markets are hierarchical and need to be regulated to work better. In this sense, trade barriers are justified on the grounds of environmental and social goals. Agriculture stands not only for land cultivation, but includes a social and cultural concept. Finally, nature is perceived as a delicate system that can be irreversibly damaged by technological interference.

According to the ACF, these abstract principles determine the basic commitments and main causal perceptions in the policy domain. This idea is helpful in that it offers an explanation for the different risk framings that we encounter across the biotech subsystem. In belief system *one*, “innovation and Standort”, the risks in biotechnology are considered to be minimal. Nature is viewed as a robust system, which is used for human ends. These advocates believe in scientific methods, the possibility of technical assessment and the management of biotechnological risks by experts. Given this risk perception they suggest that biotechnology provides useful and innovative methods for improving agricultural production. Hence advocacy coalition one demands that regulation should be ‘reasonable’, allowing biotechnological innovations in society.

Belief system *two*, “risks therefore alternatives”, in contrast exhibits a very different perception about the risks involved in biotechnological applications. These advocates hold that biotechnology poses unpredictable risks and uncertainties, even beyond biophysical ones. Nature is considered a delicate system, which could be irreversibly damaged by technological manipulation. There is a pervasive sense that science does not provide the tools for evaluating or controlling, let alone judging the risks. Assessing risks is most of all understood as a social and political exercise, which is not, and shall not be confined to experts alone. Given this rather negative perspective biotechnology is seen as aggravating environmental *and social* risks, which is why restrictive regulation and the development of alternatives is considered to be a more desirable goal for society.

### **Coalitions share beliefs – to a certain extent**

At the beginning of the 1990s, at the time of the legislative developments, the following coalitions could be found. The pro-GM “coalition one” was mainly made up of scientists, involving leading research institutions such as the German Research Society (DFG) or the Max Plank Society (MFG). In their support for biotechnology the scientists were backed by industry circles most of all coming from the chemical industry. Parts of the German regulatory system, such as the Ministry of Research and Technology (BMFT), the Ministry of Health (BMGS) or the RKI were also amongst the biotech supporters, as were many



members of the liberal/conservative government. "Coalition two" was a much broader-ranging coalition made up of environmental, women's, handicapped and religious groups, organic farmers, part of the labour unions, and critical (research) institutions, such as the Öko-Institut or the Gen-ethische network, and was supported by the German Green Party.<sup>24</sup> Could these opposing coalitions be examples of 'true' advocacy coalitions?

Certain general observations can be made at this point. When looking at the material, it can be discerned that members of the respective coalitions share beliefs and that they have engaged in joint activities. However, within the coalitions themselves the member groups have differing beliefs and priorities and the extent of institutionalized interaction between the groups is not uniform. There are substantial differences between, say the beliefs and motivations dominating the women's groups and the environmental groups with respect to their stance on biotechnology. The same could be said about the belief system of scientists and industry circles. As is stated in the material, the scientists were driven by their quest for research autonomy while industry circles were more interested in questions of application and commercialization. This means that members of one coalition may have an opinion on other subjects within the overall belief system, for example scientists with beliefs regarding trade or the market, but not necessarily need to do so. Similarly, the non-institutional interactive nature of (partly) ad-hoc social movements can be quite different from the well-established ties that exist between industry circles, regulators and scientific institutions. Nevertheless, as can be seen, they engage in common activities and propagate a specific regulatory approach. That is, the coalitions that we find in the subsystem show elements of Sabatier's advocacy coalitions, but do not wholly fit into the restrictive scheme. The retailers, who could be considered as part of the "consumer choice" *discourse* coalition by the mid-1990s, would, from an ACF point of view, not classify as a member of an advocacy coalition. The retailers would be judged as

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<sup>24</sup> Bandalow (1999) makes the interesting observation that leading figures of the protest coalition in the 1980s and early 1990s were mostly made up by women, whereas the proponent coalition was dominated by men, and suggests that this was mainly due to the subject of reproduction medicine which was a central issue at the time (ibid.: 194).

a “material group” which seeks to maximize its self-interest rather than specific values (“purposive group”) (Sabatier 1998: 116).

### **Policy change through change in beliefs/strategies or external factors**

The ACF has two primary forces of change: a) the values of coalition members and b) exogenous shocks to the subsystem. As the result of new information or external shocks each advocacy coalition may revise its beliefs, though mainly in secondary aspects, and their strategies. How does ACF make us look at the changes during the 1990s? The deregulation phase began directly following the implementation of the Genetic Engineering Act at the beginning of the decade. As was mentioned earlier, this phase was strongly driven by arguments about the preservation of the German economy. In Sabatier's terms, German reunification and the recession could be understood as ‘external factors’ changing the contextual variables of the policy process. Subsequently economic considerations and thus economic actors could be expected to gain in importance. However, apart from these external factors, the question remains whether changed beliefs or strategies played a role in the loosening of provisions of the act. Bandalow (1999) claims that policy-relevant scientific information regarding risks confirmed the scientist's stance on “over-regulation”. As biotech wasn't as dangerous, controls could be relaxed. It could thus be argued from an ACF point of view that, on the basis of new information, the scientists and the industrialists (members of the same coalition) joined forces in order to push for deregulation. However, against this interpretation, Gill et al. (1998) assert that ‘experience’ at this point could only be provisional and thus hardly justifiable as a hard scientific fact leading to knowledge-based cognitive change. Here it may be more appropriate to speak of changed strategies on the side of the scientists, who realized that by jumping on the bandwagon of the “Standort” debate it would open up a “window of opportunity” for getting rid of tiresome regulation.

Against the background of the agro/food biotechnology problématique, by the mid-1990s there is a similar mechanism discernable. Here again, Sabatier would possibly explain the contextual changes by external factors, the new GM grain entering the market and strong

consumer rejection. Leaving out the interpretative schemes that would be required at this point of the analysis (such as coming to realize that working through the market could be more successful), how would one understand the policy shift towards consumer protection? Did Greenpeace start a market-based campaign on the basis of changed beliefs or rather a change in strategy (after all, the NGOs were even having arguments about entering the labeling debate on the grounds that this could dwarf a policy of total non-acceptance)? As the material showed, by the mid-1990s the battle on safety regulation was lost and GMO products were arriving on the market. Instead Greenpeace, and to a certain extent other GM critical groups, could be understood as having used the labeling and consumer choice debate and action strategically as another *different* way of realizing their core beliefs. "Consumer choice" was used as a means to keep GMOs away from the market by blocking the introduction of the technology. Accordingly the labeling criteria demanded by these groups focused on *full* declaration, which would allow consumers to fully exercise their right to reject GMOs. The action of GMO proponents could be explained in a similar way, that is, with respect to tactical, strategic behaviour. GMOs had reached an impasse and GMO proponents felt compelled to respond to these political and market constraints. In this sense labeling was merely a tactical response and the labeling criteria kept as minimalist as possible. Policy change towards market-based strategies can thus be explained as a mixture of 'external' factors and changed strategies on the side of both advocacy coalitions, but not as a result of belief change.

### **Defending core beliefs: strategic argumentation and struggles for meaning**

According to the ACF, advocacy coalitions act and interact regularly to influence policy formulation in a given policy area. In order to reach their policy goals and to defend their core values they engage in all kinds of activities and strategies. Even though Sabatier's understanding of science in policy is problematic, the notion of beliefs may be helpful to get a clearer understanding of the science-politics interface and how and why it is being used the way it is. As we have seen in the narrative, two different understandings of agrobiotechnology were advanced by the coalitions. On the one hand a scientific/technical

understanding of biotech and on the other hand a science-informed, but principally political, understanding of biotech. In the first case biotechnology is a matter of scientific expert judgement, while in the latter case biotechnology is claimed to be subject to (much) broader political deliberations.

When looking at the coalition's belief systems, one could argue that this cleavage might arise from different accounts of science. In belief system one, risk perception is informed by methodological and epistemological certainty. This means questions on risks can be solved within the realm of objective science and 'non-risk concerns' appear to be political (politics needs to be avoided because it is not 'objective'). In belief system two, the belief in the limitations of the scientific method constitutes a principle source of uncertainty. As science cannot be an objective arbiter of a technology's safety, other, non-scientific, normative judgements are needed in order to come to a decision. From such an uncertainty point of view the insistence on science appears at best reductionist, at worst partisan.

These questions of demarcation played a great role not only in the WZB TA procedure, but also in the GM crop approval system. Yet looking at the concept of "relative safety", "acceptable harm" or proposed benefits of GM crops, these neat categorizations cannot be uphold. As the sociology of science literature shows, the choice of comparators and the considerations of uncertainties and benefits are themselves subject to normative beliefs (Levidow et al. 1997). They represent preferred models of social order with specific views about the distribution of power and responsibility in society. Such a proclaimed pure "science discourse" in risk regulation is thus equally informed by values and ideas.

Thus in the hegemonic debate about agro-biotechnology these issues are being *discursively* compartmentalized, thus reifying taken-for-granted understandings about science and politics as two discrete realms. Whether this happens on the grounds of denial, ignorance or political tactics cannot be ultimately judged.<sup>25</sup> Scientific and

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<sup>25</sup> The sociology of science literature has shown that 'risk' has become the organizing principle in conflicts over environmental regulation. A risk discourse has become hegemonic and to be taken seriously in the

political/ethical arguments are constantly intermingled and separated, this being done on both sides of the political divide, as for instance in the "Standort" debate or the "sound science" discourse. The fact of the matter is, that it happens, and that it has decisive consequences for the policy process of how actions are framed, by whom, and at what particular instances in space and time. What is considered a 'legitimate argument' in biotech regulation has important implications, and these insights are not at all trivial - as Sabatier's handling of language suggests. A focus on beliefs may explain the *motivation* for such behavior but cannot fully take account of these dynamics.

## Conclusion

This chapter focused on the time period from the beginning of the 1990s up to 1998. In summing up, what can be said about the policy dynamic in this period and the use of the theories?

### *Dominance of technical-scientific framing*

During the 1990s a scientific risk framing, and practices based on such a framing prevailed. DCF can explain, by way of such framings, how the hegemonic policy community - a discourse coalition made up of powerful institutions like research, regulatory bodies and industrialists - managed to insulate itself from the demands that were brought forth by biotech critics. That is, claims were being rejected as unscientific, provisions in the GenTG interpreted in a narrow 'scientific' manner, and political debate was kept to a minimum. This way, socio-cultural frames could be silenced and 'non-experts' excluded.

Sabatier recognizes the importance of science in the environmental policy process. However, in its positivist treatment of science, the ACF shows little awareness of the power-related practices and effects of framing in the science-politics interface. Nevertheless, the idea of belief systems and the idea of strategic behaviour can add

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debate, actors have to reproduce the risk, meaning, the science discourse: "The decision to frame environmental problems in terms of risks, for example, rules out other possible ways of talking about harms to humans and the environment" (Jasanoff 1999).

something useful to an understanding of the policy process. The ACF suggests that it is due to specific belief systems that accounts of science and uncertainty differ between the coalitions. In order to realize or defend core beliefs, coalitions adopt strategies. One strategy could be framing issues such that they promote coalition's political agendas. Strategic use of categories, such as "science" and "politics" can then be understood as a result of critical interactions between discourses and beliefs.

### *"Deregulation" of the GenTG in 1993*

DCF can offer an explanation for the success of the deregulation efforts. Through a DCF analysis one can show that framing, for example the "Standort" discourse, changed the nature of the biotech issue by linking it to broader symbolic structures, in this case neo-liberal paradigms of growth and competition. At the time (reunification, high unemployment), the issue rose in importance and thus gained political support. The critics lacked such a powerful (non-scientific!) counter frame. Efforts in trying to frame biotech critical activities, such as labeling, in terms of a "Standort" advantage remained unsuccessful - an example that framing as such does not exert power, unless it falls on 'fruitful' ground. Thus chances of creating a powerful counter discourse were slim.

The ACF has two primary forces of change: a) the values of coalition members and b) exogenous shocks to the subsystem. It can be concluded that policy change toward "deregulation" was a mixture of both, external events and changed strategies of coalitions. However, with respect to 'external events' the approach is weak. Exogenous events do not have a direct, unmediated effect but can be manipulated and used for their own purpose. The "Standort" debate illustrates this process when coalitions use the opportunity to push their policy beliefs by framing issues so as to dramatize situations and to obligate specific policy decisions.

In analyzing the effect of discourse, the DCF can show how the “choice discourse” brings new dynamics into the policy process. The DCF points to larger discursive patterns, such as trends towards food quality, which explains its ‘fit’, and how it comes to drag new actors into the subsystem and opens new ways of opposition. Most importantly with “consumer choice” a powerful economic actor, the retail sector, came to change its interests and became part of the discourse coalition of biotech critics. For the DCF this is a powerful example of discursive effects.

The ACF has difficulties in explaining the change in context, and the compelling nature of “consumer choice” and why this offered new opportunities and constraints. Yet using the belief lense for the analysis of “consumer choice” it could be shown that all actors drew on the concept but defined things very differently, again in terms of their own core beliefs. All actors used tactical, strategic behaviour to use the situation to its best advantage. From the ACF point of view the retail sector would not count as a coalition member (no shared beliefs, just interests). A more realist interpretation may attribute the success of consumer choice to economic interests, not discourse.

## CHAPTER FIVE

### 5. Counter hegemonic frame enters government: the transition phase between 1998 and 2000

This chapter will continue the narrative putting the focus on the end of the 1990s – more precisely the period between 1998 and the BSE crisis in 2000. This phase merits separate consideration as it marks a departure from the earlier GM policies of the German government. There were some important events in the political system, such as the election of a new federal center-left ('red-green') government with the participation of the Green Party. This was also the time when the conflict surrounding GMOs became increasingly 'Europeanized' with repercussions for the German policy stance. Lastly there were material developments that brought pressure to bear on the hegemonic policy line. The objective of the chapter is to show the new tensions that arose in the German agrobiotech regulatory system as a result of these developments and the way in which these were handled. Using the two analytical approaches, it can be shown that the developments within this phase cannot easily be characterized, as they show both continuity and change. Most importantly, however, the situation described marks the end of the hegemonic policy rationale of the 1990s.

#### 5.1 Contested frames and antagonizing coalitions

##### 5.1.1 The new coalition government and its ambiguous stance on biotechnology

In October 1998, a major change came in the German political landscape. Following national elections, a coalition between the Social Democratic Party (SPD) and the Green Party (B'90/Grüne) replaced sixteen years of conservative/liberal ruling, which many regarded as a coming of a new age in German politics. For the first time the Green Party constituted a governing party at the national level. The concept of "ecological modernization" put down in the coalition agreement<sup>26</sup> nurtured hopes in the environmental

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<sup>26</sup> A "coalition agreement" is the result of negotiations between those parties that come together to form a new government in order to achieve a majority position in parliament. The coalition agreement basically states the



camp for a turnaround in approach towards hotly disputed technologies, such as atomic energy<sup>27</sup> and biotechnology. Yet there were great differences in positions between the two coalition partners regarding these themes. With respect to biotechnology, the Green Party had by this point come to a more differentiated view in terms of judging medical applications, however it continued to fundamentally reject biotechnology in food and agriculture. Within the SPD Party, the larger partner in the coalition, there were two positions. On the one hand there was an influential and powerful faction of research and economic interests that held on to the "Standort" rhetoric (as introduced in Chapter four), while on the other hand, though much less prominent, there were the environmental and agricultural focused groups that pronounced a rather critical attitude towards the technology.

Given this variety of interests within and between the parties, the coalition government's common coalition agreement was marked by vagueness and ambiguity. It stated that, "the new government will continue to responsibly develop the innovative potential of biotechnology and genetic engineering".<sup>28</sup> The agreement thus stated a clear positive position towards the technology. The innovative potential seen to lie in the technology, however, was not linked to the "Standort" discourse, as was previously the case, rather to "new possibilities and changes for cleaning up the environment." It was furthermore stated that "alternative procedures and strategies must be granted an appropriate space" and that "risk and safety research should be strengthened". Yet given the overall framing of the agreement the 'new' biotechnology approach of the coalition did not seem to mark a significant departure from the policies of the preceding liberal/conservative government. The fact that some themes of the popular critique were taken into account was mostly considered to be the result of a necessary compromise between the coalition parties

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policy objectives, which are to be pursued by the new government. The coalition agreement is not binding, however, it serves as a crucial political guide post as it 'nails down' often hard fought out compromises and policy objectives. It sets, so to speak, the "terms of trade" between the coalition partners.

<sup>27</sup> An "Atomausstieg", a decision towards terminating the usage of atomic energy was one of the fundamental demands that were brought into the coalition agreement by the Greens. This "Atomausstieg" was eventually followed up, however, the partners could not agree on an actual legal decision in this case. Instead the government made voluntary arrangements with industry to phase out atomic energy by 2020. This decision, however, could be up for revision by a different government.

<sup>28</sup> The coalition agreement can be found at: [http://archiv.spd.de/politik/koalition/vier.html#vier\\_2](http://archiv.spd.de/politik/koalition/vier.html#vier_2)

(Kiper 1999). As one commentator noted, this stance put forth in the agreement did not actually amount to a common 'red-green' position on agro-biotechnology, because "there was none" (Grewer 1999: 31); the two frames were simply added together.

However, more telling than the wording of the coalition agreement was the staffing of positions within the circle of ministries and institutions in the biotechnology regulatory network, and the practices that followed. The two leading institutions in biotech regulation were distributed between the parties in the following way. The Ministry of Education and Research (BMBF), the key institution of "Standort" based public biotechnology support, was given to the Social Democrats<sup>29</sup>, while the Ministry of Health (BMGS), the regulator for biotechnology, was given to a Green Party member, as was the Ministry of Environment. The Ministry of Agriculture (BML) was put under social democratic leadership. Confirming the pro-biotech SPD position, already by the end of the year Edelgard Bulmahn, the Minister of Education, had confirmed the research priorities in the field of biotechnology and promised an increase in public funding. To quote Bulmahn: "the stagnation in public research funding in genomic research seen in the last few years will be stopped." A plant genomic research project (GABI) planned under the preceding government was finally given the go-ahead by the end of 1999 "in order to give a positive signal for agro-biotechnology" (both quoted in Kiper 1999: 48). However, with respect to research, the 'green' position was also followed up, albeit the scale of support was different. As foreseen in the coalition agreement, biosafety research was given more attention and the budget was increased by 65 per cent (from 5 to 8 Mio EUR).<sup>30</sup> Research groups, in former times practically non-existent in BMBF research circles, were gradually given access to research budgets (for example the GenEERA project) and decision-making structures.<sup>31</sup>

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<sup>29</sup> The post was offered to the Green Party, but they could not come up with a candidate. In critical circles this was judged as a missed opportunity for changing research priorities (Kiper 1999).

<sup>30</sup> In the year 2000 a new biosafety research programme was launched which newly introduced a communication module to open up the research results to the wider public. For more information on the programmes see: [www.biosafety.de](http://www.biosafety.de)

<sup>31</sup> In the area of agricultural research, the Greens achieved the installation of a "Research Institute on Organic farming" (FibL).

### 5.1.2 The revision of the Deliberate Release Directive and the non-existent "German" position

With the participation of the Green Party in the new German government the challenges to biotech policies were now carried into the heart of the political system. However, even though the Ministry of Health, the main regulating body and hosting organization of the RKI, and the Ministry of Environment were under 'green' leadership, 'uncertainty-based' policy objectives were given a hard time in standing up against the more powerful social democratic "Standort" positions. The difficult relationship between the Greens and the SPD Party can be nicely illustrated by the case of the revision of the Deliberate Release Directive 90/220 at the European level in 1999.<sup>32</sup>

The original EU Commission proposal from 1998 was written against the background of relaxing requirements for approval of GMOs, and Germany was amongst its most vocal proponents. Yet in June 1999 the Common Position from the Commission and the European Parliament had already included more stringent safety-based regulatory measures. At the time, the EU Council was under German presidency. At the beginning of the council negotiations, the 'red-green' government continued to hold on to a strict deregulation line, despite being already isolated with this stance within the new, rather GMO critical European mainstream. For instance, the German delegation to the meeting suggested the introduction of an integrated procedure to centralize authorization of GMOs in order to accelerate approval.<sup>33</sup> Germany was furthermore criticizing the idea of phasing out antibiotic resistance marker genes used in GMOs, even though this was put down as one of the points to consider in the coalition agreement. Despite these initial attempts for 'deregulation', a revised version of the Directive was finally adopted by the EU Council,

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<sup>32</sup> All legislation can be found on the EU Commission website: <http://europa.eu.int/eur-lex/lex>.

<sup>33</sup> Explaining why the Greens supported the SPD stance in the beginning, Riedel, State Secretary in the BMGS, gives insights into the negotiation skills and tactical maneuvers of the Greens: "In the media one could hear that the German delegation – and I want to stress this point we talk about the delegation and *not* the presidency (the Green Party member Minister Trittin chaired the meeting) – demanded the introduction of a centralized procedure. For this, we as Greens have, quite rightly, been criticized. The proposal was brought in under the pressure of the Social Democrats. This was the price to pay for getting the SPD Party to tolerate such things as the limiting of approval, the precautionary principle, the improvement in public participation and more stringent risk assessment criteria. That's why we quite happily brought in the proposal, especially because we knew that it wouldn't have a chance to get through anyway" (Riedel 1999: 35).

including even higher environmental and health standards than before. According to Ulrike Riedel, State Secretary (that is, number two) at the time in the Ministry of Health, this result was, amongst other things, understood as a product of Green Party pressures:

“The common position in the Council of Ministers, which foresees more stringent measures to protect health and the environment can also be attributed to Green Party negotiation skills. We have managed to bring about an EU consensus on a high level of protection. This could be done in coalition with other European partners and against the will of our social democratic coalition partner, most of all against the Ministry of Economics and the Ministry of Education and Research. Just in passing: The SPD Ministers didn't miss a chance to prevent us from making this happening” (Riedel 1999: 34).

Because of these differences in opinion on the subject of biotechnology regulation, the cooperation between the Greens and the Social Democrats proved to be extremely difficult. This is one of the main reasons why a common German position on policy was hardly ever reached.<sup>34</sup> The different ministries and institutions involved in biotech regulation, embedded in different policy debates and client bases, held different opinions in the labeling debate or opted for different thresholds.<sup>35</sup> Even though there were discussions led within the Green Party about a need for a move beyond the official Green Party line of total GMO rejection in agro-biotechnology, the differences in the positions of the Greens and the Social Democrats seemed irreconcilable at the time.<sup>36</sup>

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<sup>34</sup> According to an insider at the scene: “At the EU level, Germany has the problem that often there is no common position on a subject. That's why many things cannot be articulated. Divergent positions exist within the government and between the different agencies. We show up with the biggest delegation but do not speak with one voice, that's how many policy opportunities got lost” (interview UBA, 06/02).

<sup>35</sup> For instance, The RKI considered labeling an unscientific measure, merely responding to political and market constraints, while the Ministry of Environment considered labeling as justified on the grounds of residual 'novel risks'. Likewise the BMU supported full process-based labeling, including animals fed on GMOs.

<sup>36</sup> For instance, in the year 1999 there was an expert round organized by the Heinrich Böll Foundation, where such questions had been discussed. The Green Party programme was criticized for leading an exclusively negative discourse on agro-biotechnology, as for instance, agro-biotechnology was defined as “genetic pollution”. Instead it was suggested that a positive discourse on sustainable food production and agriculture would be a more appropriate way of positioning (Heinrich Böll Foundation 1999).

### 5.1.3 The decision on Bt maize 176 – differences in science-based policy

As mentioned above, the Ministry of Education and Research (BMBF), under the lead of the social democratic Minister Bulmahn, continued to play the role of the biotech proponent among the institutions involved in regulation. So hopes for change towards a different policy were placed upon the green-led Ministry of Health (BMGS). After all, the Ministry of Health held the political responsibility for biotech regulation and the RKI, the Competent Authority for GM crop approval, was under its authority. In the first year of being in office, the Minister of Health, Andrea Fischer, had not been particularly active on the subject of agro-biotechnology.<sup>37</sup> Even though Fischer was playing an active and critical role in the negotiations of the Biosafety Protocol on the international level, she was criticized for neglecting the theme of biodiversity preservation at home. The new staffing of the ZKBS and the RKI in 1999, for instance, went through without any fuss. And this even though the assessment rationale and voting behaviour of these institutions regarding GM crop approval was not at all in line with the critical stance of the Minister.<sup>38</sup> Thus Fischer did not seem to live up to the promises given in the coalition agreement – not to mention the party programme of the Greens – for which she was heavily criticized.<sup>39</sup>

However, the Ministry of Health was not quite as passive as it seemed from the outside. For instance, in the coalition agreement it was stated that, "negative effects from antibiotic resistant marker genes have to be avoided". In order to implement this proposal the BMGS tried behind the scenes to convince industry to refrain from the use of antibiotic marker genes in future transgenic products. More importantly though, in private consultations with Novartis, the ministry tried to convince industry to exercise self-limitation with respect to the commercialization of Bt maize 176, as this crop was in the process of getting commercial scale cultivation approval as the first GMO seed in

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<sup>37</sup> At the time the subject of medical biotechnology and human cloning was taking up much of her attention (Hampel et al. 2001).

<sup>38</sup> It needs to be said, though that it is the RKI and not the BMGS, which acts in the respective institutions in Brussels.

<sup>39</sup> It was speculated that this was the case because Fischer had been sidelined by the more powerful BMBF and BMWi. According to one commentator: "Increasingly German biotech policy is decided in the Ministry of Education and this is where the old 'pro-biotechnology' course of the Kohl-government is upheld" (Löhr 1999).

Germany. Bt maize 176 was given EU wide authorization earlier in 1997 under the old EU Directive 90/220, without imposing additional safety measures or post-release monitoring. With the possibility of large-scale cultivation – which a seed approval would authorize – Bt maize would be allowed to spread in an uncontrollable way. It was this that the ministry aimed to avoid, however, these private undertakings were not successful (Riedel 2001).

In April 2000 the German government finally invoked article 16 of EU Directive 90/220 in order to suspend market approval of Bt maize 176. The application for commercial scale cultivation was subsequently put on hold. The Ministry of Health<sup>40</sup> invoked the precautionary principle for its suspension and justified its decision on the grounds of new scientific evidence<sup>41</sup>, which it claimed cast reasonable doubts upon the long-term safety of the GM maize plant. This decision caused a major uproar in Germany's GMO related political and scientific community. For the first time, the Competent Authority RKI was asked by the Ministry of Health to disregard the recommendations of the scientific advisory body ZKBS, which voted positively over the safety of Bt maize in 1999. Additionally, there was no consultation before the ban, even though this constitutes a usual practice in authority decision-making. This caused major trouble between the regulators and the scientists. The ZKBS claimed that the information did not present any new evidence and that some of the scientific studies provided were methodologically flawed (ZKBS 2000).<sup>42</sup> This led the advisory body to the conclusion that the decision must have been 'political' rather than scientifically sound. After all, in the case that the seed approval had proceeded, GMOs would have been given the final go-ahead in Germany under the authority of a Green Party.

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<sup>40</sup> In a discussion (Lemke/Winter 2001) Riedel stressed that this decision was not unilaterally taken by the BMGS, but was carefully tuned with the other ministries. The leading argument was that BT maize 176 would not be approved with no conditions attached under the new EU Directive (ibid.: 273).

<sup>41</sup> The following four points were put forward: Effects on non-target organisms, development of resistance to Bt, toxin releases to soil and antibiotic resistance.

<sup>42</sup> In September 2000 the Scientific Committee on Plants (SCP) of the EU basically upheld the reasoning of the ZKBS by stating in its opinion that "The SCP has examined the scientific information by the German Competent Authority and does not consider that this alters the original risk assessment carried out on the Bt maize 176 line (...)" (SCP 2000). However, the German CA has not pulled back its decision and Novartis did not file a lawsuit against the German CA.

With the invocation of article 16 in case of BT maize 176, the disputes between the pro-GM and GM-critical fractions within the government were thus openly played out between the parties involved. Again the conflict was evolving around the question of science and its demarcations from non-scientific factors. The main argument between the opponents was therefore what constitutes legitimate and scientifically sound evidence? The following extract of an interview with Ulrike Riedel, State Secretary, BMGS and Gerd Hobom, Chairperson of the ZKBS, printed in the weekly paper DIE ZEIT in 2000 gives insights into the arguments used:

**DIE ZEIT:** "Professor Hobom, why do you ask for the approval of GM maize?"

**Hobom, ZKBS:** "For me GM maize constitutes an ideal ecological solution." (...)

**Riedel, BMGS:** "Whether Bt maize constitutes such an ideal solution needs to be proven first. (...) Whenever the ZKBS points towards the reduction of chemical pesticides it does not base its decision on scientific facts but takes into consideration economic factors, which is, however, not up to the ZKBS to decide."

(...)

**Riedel:** "We have looked at the scientific data and found that these provide reasonable grounds for the assumption that Bt maize could cause environmental damage. (...) "

**Hobom:** "(...) But the votes of the experts do not verify such an assumption. As you said before: 'All decisions on GMO releases have to be based on the current state of scientific knowledge, which cannot be politically decided.' This principle does not seem to apply in this case?"

**DIE ZEIT:** "Who defines the current state of scientific knowledge? The ZKBS alone?"

**Hobom:** "There is no such thing as definition power in science. However the selection process for members of the ZKBS, which is usually done by the Scientific Council (Wissenschaftsrat), brings together the reputable expertise in the field in Germany." (...)

**Riedel:** "(...)“As a basis of our decision-making we consider the whole spectrum of scientific opinion. (...) In asking the Öko-Institut for advice we wanted to broaden the pluralistic basis of decision-making.”<sup>43</sup>

(...)

**Hobom:** "(...) When disproportional weight is given to scientific minority opinions then this is a political decision.

(...)

**Riedel:** "Of course we trust our experts. The ZKBS does an important job, but it is an advising committee. (...) In assessing the consequences of highly complex technologies there cannot be one true scientific opinion. These days, one researcher criticizes the other, especially in the field of biotechnology. There are cases where the authority has to disregard the vote of its experts. It is the state, which is held responsible in the end, not the ZKBS.

An UBA official commented on the decision as follows: "The decision was a product of the 'red-green' coalition government. It was not an idea born by the RKI. It is a science-based politically pushed decision. However, justified by precaution" (interview UBA, 06/02).

#### **5.1.4 The upgrading of environmental expertise**

##### **UBAs position strengthened**

As could be shown, in the case of Bt maize the new forces within the government started to challenge the approval practices based on a scientific-technocratic model. The green-led Ministry of Health introduced new sources of scientific evidence and the precautionary principle, thus countering the old framing of legitimate scientific expertise in the regulatory process. This, however, was not the only case of challenges to the conventional practices and hegemonic forces under the new government. In the past the Federal Environmental Agency (UBA) had advocated a different, more precaution-based approach in risk assessment. However, within the bodies involved in the approval procedure the UBA was

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<sup>43</sup> One of the main subjects of dispute was a study on antibiotic resistance submitted on demand of the Ministry by the Öko-Institut Freiburg – an institution well known for its critical stance on agro-biotechnology and its close links to the German Green Party.



only at the level of a subordinate body, thus not constituting an official part of the Competent Authority. In addition, the UBA's expertise was only considered in the case of field trials and not with respect to market approval, in which case it could only submit an opinion. For these reasons the UBA's more critical voice and expertise was marginalized in the approval procedure.

Under the new coalition agreement this regulatory arrangement was due to be reconsidered. It stated that, "the regulatory competency for approval in deliberate release of GMOs shall be reviewed", again a point brought in by the small coalition partner. The strong position of the RKI – long regarded with great mistrust in critical circles – should in this way be broken, and approval decisions be based on a broader range of expertise. A change in competence, however, would have required a change of the Genetic Engineering Act (GenTG) but there was no parliamentary majority for such a move at the time. This is why the role of the UBA was upgraded by a ministerial enactment requiring its consent, as opposed to just opinion, on market approval, this way putting it on an equal footing with the RKI (Riedel 1999). According to an insider this measure meant a great deal for the work of the environmental agency:

"In the past under the CDU/FDP government we were neither incorporated into the communication and information exchange channels between the different ministries nor were we asked to attend the meetings in Brussels. We thus did not know of the leading discussions in the field and our work surely suffered from this. (...) This really changed when the 'red-green' government came in power. We demanded to be heard and all of a sudden most of the information channels opened up and we were able to work on a totally new, much more competent basis. Under the new government, what we say is considered to be important" (interview UBA, 06/02).

In 1999 the UBA was furthermore entrusted with the role of heading a Governmental/Länder working group<sup>44</sup> to prepare a post-release monitoring concept as

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<sup>44</sup> Members of the working group are: representatives from the Ministry of Environment (BMU) and the Federal Agency for Nature Conservation (BfN), Federal Environmental Agency (UBA), Federal Biological Research

envisaged in the new EU Directive. The discussion about the necessity of long-term environmental observation of GM plants had been taken up early on by the environmental agency. Since 1995 the UBA had been dealing with the subject of "Monitoring of genetically modified plants" and has, since that time, concluded various studies. In the coalition agreement of the 'red-green' government, great importance was attached to scientific observation accompanying the cultivation of GMOs. In a decision of the Conference of the Federal Environment Ministers in 1998, the UBA was finally chosen to be the leading agency in this area (Sauter/Meyer 2000).

However, the UBA's leading role in questions concerning the monitoring of GMOs did not remain uncontested. In 1999, a second working group<sup>45</sup> was established, under the leadership of the Federal Biological Research Center for Agriculture and Forestry (BBA)<sup>46</sup>. Also in the same year the RKI, as Competent Authority, had intervened in the discussion by arguing for the clearing center tasks to be established under its authority (ibid.). Once again, behind these 'institutional' quarrels stand conflicting ideas about the monitoring rationale. For the environmental agency monitoring is framed as an instrument of a "precautionary environmental policy" (Joint Working Group 2002). The UBA focuses on ecological effects and the broader environment, and stresses the importance of uncertainty and non-hypothesis led observation. The BBA group, in contrast, frames monitoring as "cultivation related monitoring", which is focusing on direct and indirect effects of GMO cultivation on the agricultural ecosystem stressing the practicability and cost-effectiveness of the measures (BBA 2000).<sup>47</sup>

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Center for Agriculture and Forestry (BBA), Robert-Koch Institute and experts from the 12 out of the 16 Länder authorities.

<sup>45</sup> Members of the working group are: representatives from the Federal Ministry of Consumer Protection, Agriculture and Food (BMVEL), from various BBA institutions, several plant health centers, RKI, UBA, the Federal Plant Variety Office (BSA), the Plant Variety Control and Advice Office of the Länder Authorities, The Association of German Plant Breeders (BDP), Institute for Sugar Beet Research, (IFZ), from Universities, and from the European Academy for Environment and Economy.

<sup>46</sup> BBA has cooperated with seed companies and various agricultural institutions, e.g. plant/seed protection agencies, within the framework of a BMBF-sponsored programme on "Biosafety Research and Monitoring". This BMBF programme has as one of its aims the development of parameters and methods for a monitoring plan. This new programme was initiated despite the fact that UBA had already worked on these questions for years. This is, however, according to insiders, constantly ignored. It seems that UBA must constantly defend its status and expertise against BBA and its associated networks.

<sup>47</sup> The wording in the coalition agreement between the Social Democratic and the Green Party from the year 2002 concerning post-release monitoring reflects this controversy. One side demanded an "efficient

## **The consideration of nature conservation aspects and biodiversity**

Notwithstanding the contested nature of installing new practices in dealing with GMOs the new governing constellation did open up space for alternative accounts to be entering the policy debates. Due to this new heightened interest in questions of ecological uncertainties of GMOs, which was mainly brought in by the Green Party and its associated networks, nature conservation considerations have been gradually given a chance to enter the debate on environmental risks and biodiversity preservation in relation to agro-biotechnology. In 1998 the German Council of Environmental Advisors (SRU) had proposed to include nature conservation principles in the approval procedure in case of large-scale introductions of GM crops (SRU 1998). In 2000 at a national expert conference dedicated to the subject and organized by both UBA and the Federal Nature Conservation Agency (BfN), demands were formulated to consider nature conservation related requirements in the context of the risk assessment for GMO release (Lemke/Winter 2001). Later in the year, in the course of the transposition of the European Habitat Directive into the Nature Conservation Act ("Bundesnaturschutzgesetz"), environmental NGOs, together with other GM critical institutions, had forcefully – but without any success - tried to lobby for the creation of a legal basis to prevent the influx of GMOs into certain protected areas.

All of these new attempts suggested integration of nature conservation principles into the risk assessment practice of GMO release. By these accounts it was understood that the specific objective of biotope and species protection would broaden the scope of interpretation concerning "protection of the environment in its systemic integrity" of the Genetic Engineering Act or may even provide a basis for the establishment of GM-free areas. The focus on nature conservation related requirements would furthermore demand more thorough risk research into eco-systemic effects, such as research into food chain and biodiversity effects and regionally varying habitat structures (ibid.). The Ministry of Health supported the inclusion of the expertise of the BfN into the GM crop approval

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monitoring" whereas the other side opted for a "comprehensive monitoring." In the end the former version was eventually used in the agreement.

procedure, justifying this under the consideration of a more precautionary risk assessment practice (Riedel 2001). The RKI, however, did reject such an initiative.

#### **5.1.5 The issue of contamination, outcrossing and gene flow**

Pressure on the conventional risk framing has come from yet other GMO related issue areas. Over the course of the years the topic of outcrossing and gene flow has, for various reasons, become increasingly important in the German GM controversy. In a rising number of cases GM-contaminated seed had been detected by the German Länder authorities.<sup>48</sup> These authorities have, due to a lack of legal requirements and a common Länder strategy, reacted differently to the issue. Some have ordered the destruction of GM contaminated fields or seed, or have demanded labeling while others did not consider this to be a problem - of whatever kind - and did not interfere. At the national level, the social democratic-led Ministry of Agriculture and the Green-led Ministry of Health held different opinions on the issue. This arbitrariness in handling caused major problems between the seed/biotech companies, the farmers and the authorities.

Although the source of contamination could (in some cases) not be established, field tests have come under increasing scrutiny, not least because confinement measures in field trails were gradually reduced within the last few years (UBA 2000). A highly disputed verdict by a court in Nordrhein Westfalen brought the issues to the fore. In the court case of the so-called "Münster verdict", the neighboring farmer of a GM rape-seed field test site had been ordered by the Länder Ministry of Environment to refrain from selling his harvest due to outcrossing which occurred between the test field and his agricultural land. The ministry argued that the product was a genetically modified organism and selling it illegal because it lacked an approval under part C of the EU Directive. The farmer went to court arguing that he did not deliberately use GMOs. This, however, was not the issue. The real issue was whether the field test approval included the possible consequence of outcrossing, or whether these for-sale-designated contaminated plants constituted as an

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<sup>48</sup> In case of food and agricultural law implementation, the Länder governments are responsible. The federal structure of Germany with 15 different states (Länder) has thus great potential for differences in implementation practices.

illegal bringing to the market. The court decided in favour of the latter stating the public interest and the precautionary nature of the GenTG.<sup>49</sup>

The RKI criticized the verdict on the grounds that outcrossing was an accepted consequence of field trial approval and, as a result did not require market approval. It argued that since outcrossing was prevented in the case that a specific effect could not be adequately assessed, it could be followed that if outcrossing occurred, those genes crossing out did not pose a safety issue. In fact, for the RKI outcrossing as such is harmful only in case it causes an advantage in selection due to an increased fitness of the plant. Gene flow is considered a "biological principle" which in itself has nothing to do with genetic modification. Critics have frequently condemned this position arguing that this was an unjustifiable "normalization of risks" downplaying the potential uncertainties involved in an uncontrollable spread of GMOs (Brauner 2002). Out of precaution, the UBA has followed the line of minimization of gene flow even when harm as such was not established.

This situation of gene flow and contamination of seed, in the absence of clear regulation, or worse, a common understanding of its legal status and a lack of thresholds for adventitious presence in seed led to legal quarrels and insecurities. This situation was held responsible for the continuous decline in field trial proposals since the year 2000. Just as important, the question of contamination fueled the discourse on economic risks and liability. For instance, in a similar civil court case in Stuttgart, an organic farmer was required to tolerate the influx of genetically modified genetic information from a neighboring GM test site, even though the farmer was prohibited from selling his harvest as organic (Abel-Lorenz 2000). This situation was increasingly found to be inappropriate and intolerable. In terms of consequences for risk management measures, the Ministry of Health ordered the reintroduction of isolation distances. In the year 2000 the UBA began a

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<sup>49</sup> OVG Münster NRW, 31.8.2000, NVwZ01,110. Another German court, however, decided differently in a similar case. The legal committee on environment for the German Länder (LAG) is sharing the position of the Münster court. See [www.hamburg.de/behoerden/umweltbehoerden/gen/oeffentlich/index.htm](http://www.hamburg.de/behoerden/umweltbehoerden/gen/oeffentlich/index.htm).

research project on genetic engineering and organic farming in which the questions of damage prevention and damage compensation were to be central.

#### **5.1.6 The “Chancellor initiative” on large-scale GM field-testing**

In spite of mounting difficulties on the German and European political landscape with regard to the cultivation and commercialization of GM crops, and the bleak economic prospects for biotech companies, the SPD Party continued to frame biotechnology in economic terms and kept on speaking out in favour of the “key technology” and its supposed innovative potential. It was Chancellor Gerhard Schröder himself who, in June 2000, took the lead in an initiative on a large-scale GM testing programme. To industry Schröder put forth the idea of an extensive experimental GM cultivation program of three-year duration when industry in turn conceded to a temporary stop on commercial release. In the meantime, according to the plan, a consensus should be negotiated within society on how to proceed further in terms of GMO release. The initiative was welcomed throughout the political spectrum, albeit with different undertones. Industry took this as a sign of political support for the introduction of new traits, whereas biotech critics interpreted this step as indirect support for the moratorium.<sup>50</sup>

The Green Party, the minor coalition partner, did not object in principle. However, against the initial plans which resulted from bilateral talks between the Chancellor and industry it was the Greens, together with GM critical institutions, that demanded that the programme would have to entail research into ecological aspects of GMO release and that the cultivation process be accompanied by a public debate (interview BMVEL, 06/03). For more than six months difficult negotiations took place between all of the political institutions involved, covering the concrete design of the programme in terms of size of the area under cultivation, the choice of traits, the safety research, and the extent of involvement with the public. In particular arguments arose about the use of the harvested products. As originally proposed by industry, the cultivation programme was to test both

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<sup>50</sup> [www.transgen.de/aktuell/kanzler/kanzler\\_chronik.html](http://www.transgen.de/aktuell/kanzler/kanzler_chronik.html) [10.01.2002].

cultivation *and* commercialization, that is, to include the sale of the product.<sup>51</sup> This, however, was strongly contested by GM critical groups. After all, at the European level plans on a wider traceability and labeling scheme were already being worked upon. Putting GM products into the food chain without taking account of these developments did not seem to be appropriate. Another problem, this time arising from industry, was the provision of seeds. At the time there were hardly any approved GMOs, other than maize, and industry itself did not want to offer any oilseed rape for cultivation purposes due to outcrossing and liability problems (interview BMVEL, 06/03).<sup>52</sup> Due to these problems, by the end of the year 2000, even intense discussions had not brought about a final consensus on the matter. The BSE crisis, which broke out as negotiations on the programme were to be finalized, then put an end to the initiative.

## **5.2 Evaluating the transition phase**

As this narrative describes an important, but not central transition phase, the following section will give a brief analytical account of the developments against Hajer and Sabatier's approaches. How would both analysts explain and judge the developments in this phase?

### **5.2.1 Discourses and story-lines as in Hajer**

For the DCF, this phase between 1998 and the year 2000 could be treated as an example of the struggle between the two leading discourse coalitions that were identified in Chapter four. As the opposition to biotechnology had until 1998 been largely confined to the realms outside of parliament and government, with the election of the Green Party to the government this situation had changed. Through this (rather non-discursive!) event critical forces were now in a more authoritative position to push their story-lines into the regulatory arena and to inform some of the practices of the government. As shown in the

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<sup>51</sup> According to press sources, Schröder was not so much interested in the science part of the programme as in the testing of public acceptance (Berliner Zeitung 2001).

<sup>52</sup> There had been cases whereby on the basis of contaminated seed the complete harvest had to be destroyed. In order to overcome those uncertainties, industry demanded thresholds for contamination in seed. As long as these thresholds did not exist industry would not offer any seed for cultivation.

decision on Bt maize 176, a different "precaution-based" model of science-based policy, pushed by the green-led Ministry of Health, had superseded the sound science based framing of the scientific advisory body ZKBS. The upgrading of the environmental agency, the UBA, the tentative consideration of nature conservation perspectives or the different conceptualization of monitoring designs all are given proof of a counter discourse starting to get a foothold in the regulatory arena. More important from a discourse perspective may be the fact that by the end of the 1990s, the German critics community could increasingly join in European discourse coalitions (or even global ones with respect to the biodiversity discourse), thereby substantiating their claims for more rigorous regulation and a change in practices.

Even though one of the leading opponents to agro-biotechnology, the Green Party, was now integrated into the regulatory system, this seemed to intensify conflict rather than create space for mediation. Direct exchange (deliberation) between the discourse coalitions and the need to come up with a 'common policy' has not brought about a perspective of closure to the conflict. As Hajer would say, there was no common discursive ground between the coalitions. The different discourses had increasingly distanced themselves from one another and were being led in separate circles. Yet the 'reality' of the biotech conflict had moved on. The problem of outcrossing and seed contamination had brought different story-lines, such as liability, to the fore, challenging approval practices and judicial judgements alike. More importantly, this development started to shift the attention to different issues, arenas and stakeholders, the *users* of biotechnological products. This way previously independent practices, biotech policy and agricultural policy, are in the process of being related. For Hajer such developments can have a potential for transformation since they change the subject and the situation for policy-making. However, at the time it was impossible to predict what the future situation would be.



### 5.2.2 Belief systems and learning in Sabatier

As already introduced, the ACF puts its focus on belief systems and external events in the process of policy change. The ACF assumes that changes in the systemic governing coalition brought about by elections can lead to major policy change. In fact, as a result of this 'external event' we see quite novel developments taking place in the time period we described above, however it does not amount to substantial changes within the overall government programme.

The minority coalition - the Green Party, a representative of belief system two, "risks therefore alternatives" - increased its importance in the subsystem with its entrance into the government, which the ACF predicts. By becoming part of the ruling governing coalition, different "uncertainty-based" policy core beliefs gained entry into the regulatory arena and became to some degree institutionalized in the coalition agreement and in the division (and staffing) of agencies. The ACF assumes that the advocacy coalitions identified in Chapter four seek to alter the behaviour of governmental institutions in order to achieve the policy objectives of their respective policy core (Sabatier 1998: 117). In this way different administrative agencies represent different interests and values and become caught up in the struggles between the antagonistic forces. Rather than convincing its coalition partner of different policy ideas, the minority coalition was more successful in using its 'allied' institutions and by resorting to different strategies in order to achieve its policy goals. As such it used strategies to undermine the coalition partner's position, as in the case of the decisions on the EU Deliberate Release Directive, or to by-pass the institutions that were not deciding in one's interests, as in the case of the ZKBS in the Bt maize 176 decision, or to mobilize and strengthen belief affiliates, such as in the case of the UBA or the BFN.

Using the ACF, one can show that policy change was possible on the basis of an 'external event', that is, national elections. The change in government did change the power balance between the coalitions, however, this did not amount to major changes to the policy core attributes of the governmental programme. Learning could be understood as

having taken place, but only on the level of concessions on secondary aspects of belief systems. In the phase described above the policy conflicts were far from being resolved. In their hearts and minds the Greens continued to focus on keeping biotech out of the country and the Social Democrats largely continued to believe in its economic potential. Minimal changes have occurred but with Sabatier we could say that at the end of 2000 the situation was basically deadlocked.

## **Conclusion**

### *What can be concluded about the transition phase?*

The transition phase shows both continuity and change. From the DCF point of view one could see that a new uncertainty discourse was able to make some inroads into government programmes and institutional settings, yet words remained more ambitious than policy practices. The critics' community could join in European and global discourse coalitions substantiating their demands for more rigorous risk assessment. However, direct deliberation between the governing coalition partners did not bring about space for conflict mediation in terms of finding common discursive grounds. Instead, discourses had increasingly distanced themselves from one another and were being led in separate circles or thrown against each other. It was neither the space nor the time for a settlement of the conflict.

Sabatier's ACF draws our attention to belief system interaction, power and institutional dynamics. A non-discursive event, national elections, triggered a change in government and affected the power balance between the coalitions. Hence, the minority coalition increased its importance in the subsystem and used its newly gained position to change the staffing of agencies or the wording of policy objectives, however, only on the level of secondary aspects of belief systems. Conflicting belief systems learned to make some minor concessions in governmental programmes but would rather use different strategies to undermine the position of the adversary and to further their own policy objectives. By the end of 2000, the two advocacies remained as antagonistic as ever. With respect to

agro-biotech, there was largely policy continuity, except now with more internal dissent within government.

## **CHAPTER SIX**

### **6. BSE, the “Agrarwende” and the consumer choice discourse of the BMVEL**

The following chapter will look at the ‘trigger’ for the policy shift in agro-biotechnology in Germany at the beginning of the new decade. The first BSE case in Germany at the end of 2000 had a radical impact on agricultural and food policies. It also changed the parameters of discussion in agro-biotechnology and influenced coalition building and power relationships. How can one understand the fact that an animal disease could have such a dramatic effect, causing a major economic and political crisis and even affecting other regulatory sectors, such as agro-biotechnology? The cognitive-normative frameworks from Hajer and Sabatier can help in illuminating these dynamics. The chapter will thus look at the framing of the BSE debate, present the events that took place and focus on the consequences of the debate for agricultural policies in general and for agro-biotechnology in particular. The two theoretical frameworks, using discourses and beliefs respectively, will be used as explanatory devices in order to gain a more thorough understanding of the changes described. This section will focus on the developments in the year 2001, from the BSE crisis to the first official statements concerning biotech regulation.

#### **6.1 The BSE crisis and the change in agricultural policies**

##### **6.1.1 The BSE crisis in 2000 and the myth of a “BSE-free Germany”**

The first mad-cow disease case in Germany in November 2000 and the following Food-and-Mouth-Disease crisis across the EU had a radical impact on the debate concerning agricultural practices and food production. The discovery of the first BSE infected cow and the subsequent rising number of new cases led to a massive drop in consumer confidence, and plunged the German agricultural and food system into its biggest crisis in post war history. Already before November 2000, the issue of BSE had been a hot topic in a country where meat constitutes an important part of people’s diets, and whose beef

industry is the second biggest in Europe. Over the years, but especially during the critical phase in the middle of the 1990s, the "BSE-horror" in other European countries was widely and intensively covered in the national media and consumer worries caused beef sales to be slashed by around twenty percent.<sup>53</sup>

Yet although consumer concerns were running high, German government policy was not characterized by an overly active approach towards consumer protection and best possible efforts to stemming the disease, neither on the European nor on the national level.<sup>54</sup> Officially "German cattle were free from BSE" and over the years this rhetoric was widely used to appease public concerns and to oppose demands for more stringent regulatory safety measures (Wolters 1998).<sup>55</sup> For many years, Germany had blocked any common actions towards more restrictive regulation at the EU level and refrained from taking deliberate safety measures in the German market.<sup>56</sup> Continuing the policy of the former government towards the risk of BSE, the new Minister of Agriculture of the 'red-green' coalition government, the social democrat Karl-Heinz Funke, opposed key European propositions concerning the removal of special BSE risk material from the food chain. In addition, just weeks before the crisis hit Germany, Funke voted against a general EU wide prohibition for the use of bone meal as animal feed - against the advice of the Minister of Health. Comprehensive testing, as another example, was never an issue pushed by the German government either. Additional measures to combat BSE and to prevent the spread of the disease – so the message throughout the time - were not deemed to be necessary from a German point of view (Hoffmann 2000). "Germany is BSE-free" thus became the mantra of the food and agricultural sector in Germany over the years, and precautionary regulatory propositions, e.g. from the side of the European

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<sup>53</sup> As Wolters (1998) describes: „Abroad people got the perception that BSE was more widespread in Germany than in the UK. (...) In both, France and the Netherlands people wondered about the "hysterical Germans" (ibid.: 153).

<sup>54</sup> Wolters (1998) describes the German policy as being torn between consumer protection and the safeguarding of the German beef industry. In fact, Germany played an important role in the EU when BSE first emerged asking for more EU measures to safeguard public health, for example with trade restrictions against British beef (Dressel 2002). However, it seems that Germany only insisted on higher standards as long as these measures were geared towards other countries and their own country was not affected.

<sup>55</sup> Germany did have six cases of infected cattle. However, the cows in questions could always be identified as imports from Switzerland and the UK. This fact was, inter alia, used to underscore the idea that BSE was other countries problem and not a German one.

<sup>56</sup> Labeling etc.

Commission, were met with reactions ranging from astonishment to self-righteous indignation (Jasper 2001).

But suggestions claiming otherwise and concerns about the truthfulness of the "BSE-free" rhetoric were mounting. In July the EU Scientific Steering Committee concluded in a report about the BSE risk in the individual member states that Germany needed to be classified as a high-risk country. (A spokesperson from the Ministry of Agriculture commenting on the EU suggestions: "This is incomprehensible. This categorization from EU experts must rest on speculation and outdated data" (quoted in Hoffmann 2000). In the context of heightened concerns, by the end of the 1990s some companies started considering testing for BSE on a deliberate basis, in anticipation of more restrictive public legislation. In the media and in expert circles it was speculated that the appearance of BSE in Germany was only a matter of time, since testing for the disease was on the rise. And so it eventually happened in a voluntary testing on 20<sup>th</sup> of November 2000. Four days later it was official: Germany had its first homegrown BSE cow.

What followed afterwards was nothing less than dramatic. Fears of infection led to a fall in beef consumption of up to fifty percent threatening to ruin farmers and the agricultural industry within a short period of time. To rule out the danger to humans contracting the disease by eating contaminated meat, thousands of cattle were killed in Germany and across Europe. In order to protect the German beef market from collapse, thousands of healthy cows were killed in a "market stabilizing measure".<sup>57</sup> However, it was not just the beef market alone that was in decline. Anxious consumers began to boycott any number of products that might contain infected cow material, from milk products to products containing gelatine, such as gummibears or medication. In this way more and more branches of the food processing industry and other branches of the economy, such as transport or retail, were drawn into the crisis. Despite the relatively low number of detected

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<sup>57</sup> The European programme, which foresaw the slaughtering of 400.000 cows to prop up beef prices, caused a huge outcry from the German public. For instance, animal rights groups wanted to sue Künaß for being an accessory to cruelty of animals. Künaß herself did not support the plan, however finally gave in under the condition that the tested meat could be used for humanitarian purposes. The German government finally agreed to donate the superfluous meat (18,000 tons equivalent to 45.000 cows) to North Korea, which had a severe shortage of food and no beef market of its own, which could be affected by the donation.

cases following the initial case, the public reaction to BSE, in both emotional and economic terms, was much stronger in Germany than in any other European country.<sup>58</sup> The political system was thus under great pressure to act. Soon after the crisis had started the political elite indicated that “business as usual” could not be leading the agenda any longer. As a consequence, almost overnight, Germany became one of the strongest proponents of immediate and restrictive actions concerning BSE. But this was not enough, the country decided to put itself to the forefront of what the foreign press called a “green revolution” (BBC 2001).

### **6.1.2 Mad cows and “Agrarfabriken”: the birth of the “Agrarwende”**

After the 24<sup>th</sup> of November 2000 Germany faced a full-fledged economic and political crisis. As a result “protecting consumers against BSE and restoring public confidence in agriculture has [become] top priority for the German government” (Federal Government 2001). Yet emergency plans were not available and the initial risk management of the government did not seem to be up to the job. A strategy worked out by Minister Funke, supported by the National Farmer's Organization (DBV), which was based on changing production systems so as to allow more transparent production and control, was rejected. The ‘severity’ of the situation, as was increasingly felt in governing circles, called for fundamental changes and a new and entirely different policy approach.<sup>59</sup> BSE had become the “Chernobyl of German agriculture” after which things could no longer be the same (Der Spiegel 2001: 25). By early January, both the Minister of Health and the Minister of Agriculture were finally forced to resign as the dimensions of the crisis unfolded and a clear, concerted political response from the government was still lacking. In her

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<sup>58</sup> An impressive elite account of the BSE-shock is given by Angela Merkel, leader of the CDU/CSU opposition in a speech in parliament: “I don’t know how you feel about this, but I am being honest: I belong to those people – and there are many of them – who believed and trusted the old and the new government that Germany was BSE-free. I did that as politician and as a consumer alike. That’s why for me and for many others the 24<sup>th</sup> of November came as a day of shock. It was a shock because the first detected BSE case has hit us suddenly and unprepared. The 24<sup>th</sup> of November has brought us back to reality” (Merkel 2001).

<sup>59</sup> Media coverage was extremely high and many commentators conclude that this played a pivotal role in policy change (Böschen et al. 2003). Also the foreign press picked up some of the German newspaper headlines, for instance, the BBC: “(...) Newspapers have devoted pages to the possible dangers lurking under the skin of Germany’s myriad varieties of sausages. On Wednesday, the tabloid BZ carried a front-page picture of Chancellor Schröder biting into a large hot-dog with the caption ‘BSE-Horror – does it still taste good, Chancellor?’ or ‘Helpless dismay at the sausage counter’ read a headline of the Bild newspaper. ‘Nobody knows for certain if German sausage is safe’ said the Berliner Zeitung daily newspaper” (BBC 2000).

resignation speech Fischer stated that beyond consumer concerns “the confidence of German citizens in the government’s ability to solve the crisis has been shaken” (Hooper 2001).

Against the background of chaotic, at times contradictory, messages from the respective government institutions and mounting consumer anxiety Chancellor Gerhard Schröder himself finally intervened - BSE had become what is called a “Chefsache” (meaning “something the boss has to deal with”) in German. Just seven days after the crisis had started, Schröder formulated in a speech to the German Parliament the necessity for “a new type of agrarian policies” which should lead away from the “*Agrarfabriken*” (factory farms). He stated that BSE required nothing less than a radical turn in agri-food policies in which “consumer interests will take priority over economic interests”. The Chancellor himself thus framed BSE as the necessary consequence of an agricultural and food system that was deeply flawed and in need of radical reforms. The animal disease was made to stand for intensive agricultural methods, mass production in food, damage to the environment and the maltreatment of farm animals. In Schröder’s speech it was unequivocally made clear that BSE was not just an incidence of a lack of control which fostered an epidemic, rather that it was the systemic outcome of productivist, lobby-driven and consumer oblivious practices in agriculture and food production.

The first and immediate political ‘action of the new kind’ was the reorganization and renaming of the Ministry of Agriculture into the Ministry of Consumer Protection, Food and Agriculture (BMVEL).<sup>60</sup> Through the reorganization of the administration, agricultural production, food safety and consumer issues were now brought together in one institution. In addition two new agencies were created: the Federal Institute on Risk Assessment (BfR) and the Federal Agency on Consumer Protection and Food Safety (BVL) (both institutions will be engaged in the authorization of GM crops and food).<sup>61</sup> As a

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<sup>60</sup> A major drawback of the institutional reforms was that hardly any personnel were changed, except for the very top ranks. On the working level Künast experienced major opposition within her Ministry (TAZ 2001).

<sup>61</sup> Both institutions were developed out of the ‘old’ Food Safety Agency, the BgVV. Schröder appointed the Federal Auditor General to deal with the crisis and to identify weak points and measures to improve the food safety system. These were part of her suggestions. As a consequence of the so-called “von Wedel Report” (von Wedel 2001), the former food safety agency (BgVV) of the Ministry of Health was dissolved and replaced



surprise move, Schröder appointed Renate Künast, a lawyer and Green Party member, to be the new Minister of Consumer Protection, Food and Agriculture. In radical contrast to all her predecessors in office, Künast being female, environmentalist and without any ties to the farmer's world and agri-business possibly symbolized more than any other decision that a complete break with conventional German farming and policy practices was planned.<sup>62</sup>

### **Ms Renate Künast – a portrait of “Frau Ministerin”**

“... the surprise couldn't be bigger: The new Minister would be a 'Ministerin' and for the first time a member of the Green Party. Moreover 'the new one' is not a farmer – like all the other predecessors – but a lawyer. A 'green', female lawyer – for many, particularly for the old-established agro-lobbyists, this was hard to swallow” (Künast 2002: 25).

These are the words of Renate Künast when commenting on her new post as Minister of Consumer Protection, Food and Agriculture which she took over in January 2001. In her book “Class instead of Mass” Künast describes the situation of her sudden appointment as agricultural minister in the midst of the BSE crisis and the challenges this entailed for the established policy circles. Not only was Germany planning to embark on a more organic future, thereby curtailing and disrupting conventional agrarian social relations, but even more shockingly, this change was going to be led by a woman who was lacking any kind of “Stallgeruch”<sup>63</sup>. This way the mad cow crisis not only put into question conventional perceptions and routines in food production and consumption but on top of it challenged culturally entrenched ideas about an agricultural minister's supposed worldviews, interests and gender.

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by two new agencies, the Federal Institute for Risk Assessment (BfR) and the Federal Agency on Consumer Protection and Food Safety (BVL). This reorganization is supposed to take account of a functional separation between risk assessment and risk management institutions (Bösch et al. 2002).

<sup>62</sup> Originally Bärbel Höhn, Green Party Agricultural Minister of Nordrhein Westfalen (NRW) was proposed for the job, yet she rejected the position. Höhn introduced consumer-oriented reforms of agricultural policies under the 'red-green' government. She was asked to provide a master plan for changing policies on the federal level.

<sup>63</sup> In German there is a double sense of the word. “Stallgeruch” literally translated means stable smell. Thus lacking any “Stallgeruch” refers to the fact that Künast does not have a farmer's background. In a second, more figurative sense of the wording, lacking “Stallgeruch” means not having a supporting (old-boys) network in the background.

"Ms Künast is a lean faced city dweller with a punk-style hair cut and a passion for rollerblading", so stated the British Guardian newspaper in 2001 (Hooper 2001a). Born near Wuppertal, a city belonging to the former steelmaking area of Western Germany, Künast was one of four children of a mechanic and a nurse. Already as a teenager she proved to be hard-headed and unconventional when she decided, against the will of her parents, to attend university and to become a social worker.<sup>64</sup> In the 1970s Künast moved to Berlin to work as a social worker in a male prison, dealing with drug addicts. Alongside her work she started to attend law school and finally became a lawyer. Künast entered green politics as a protester against nuclear energy at the end of the 1970s. In 1985, already well established in Green Party politics, she was elected to become a member of the Berlin parliament. Within the green movement she is regarded as moderate, pragmatist and independent. In the year 2000 Künast was elected, together with Fritz Kuhn, to be the party's overall leader.

"A lawyer by training, the 45 year old has a reputation for humour, hard work and quotable repartee" (ibid.). For her crisis management during the BSE crisis, Künast quickly got the reputation of a determinate, tough and highly professional politician, even within farmer's circles. For many commentators the question of how the "Stadtgöre"<sup>65</sup> would manage the stubborn and mostly conservative farmers was paramount. The following quotes give an idea of the difficult relationship between the minister and the farmers and the way Künast handles the conflict:

Künast: "I remember a speech on the 24<sup>th</sup> of January, when one of the conservative party members of parliament interrupted me and said that I had never seen a farm from inside. I countered immediately, saying: "Could you then explain to me why those who know the farms from inside were not able to prevent the problems that we face today?" He did

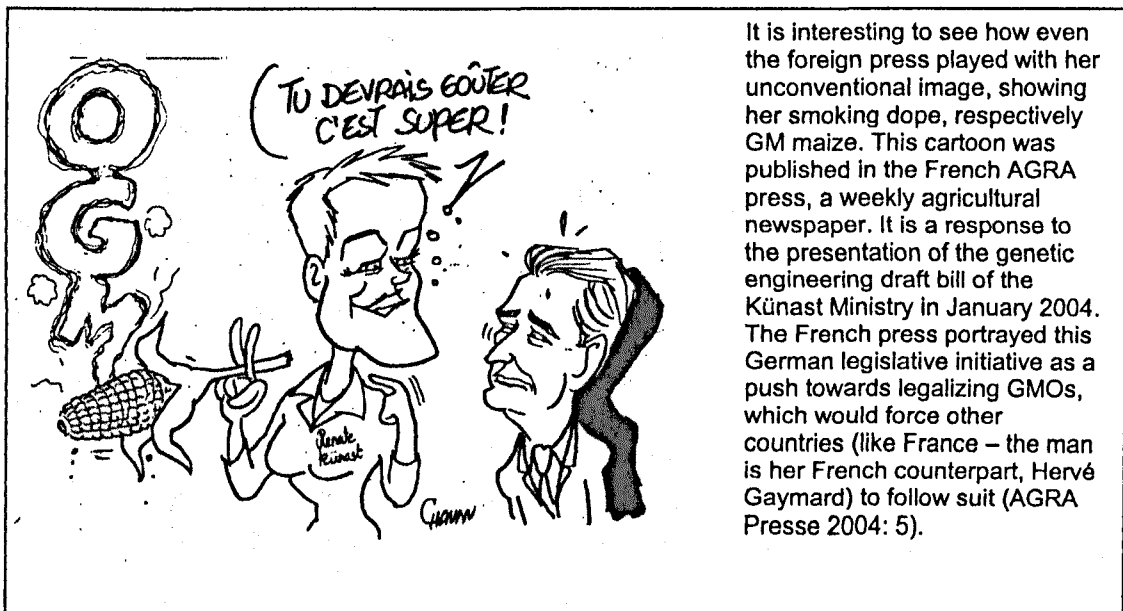
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<sup>64</sup> Künast: "When college was over in the beginning of the 1970s my mother wanted me to become a bank clerk. In my wildest fantasies I tried to imagine how I would walk into the bank dressed in a pleated skirt, with curly hair and on high heels. An image which was so not what I wanted.(...) I could have never imagined playing a classic female role (Künast 2002: 26).

<sup>65</sup> The expression "Stadtgöre" could be translated as 'saucy city girl' and is thus used in order to describe the great difference between the live world of Künast and the farmers. This or similar expressions were quite often used in the news in the beginning of her post as the 'farmer's minister'. Depending on the context it was used in a derogatory/negative sense or an empowering/positive sense.

not answer the question (Künast 2002: 65). When asked about how she would manage to get the farmers on her side in the reform process, she is quoted as saying “as a social worker in the jail of Tegel I even managed to get the respect of jailbirds and screws” (Der Spiegel 2001a: 24).

Künast shows no illusions about the magnitude of changes that the new policies are asking for. She understands her minister position as a big challenge - and so certainly do most of the farmers. With Künast, the powerful farming lobby lost its most important ally in the political arena. But, as equally important, for a great many of her ministry's clientele, Künast – an unmarried, Green Party member, female professional - is the embodiment of both a particular, almost alien culture and a problematic normative vision of the human and the social.<sup>66</sup> Thus with the appointment of Künast as the new ‘farmer's minister’, for some the “Agrarwende” became a challenge not only on a structural basis but also on a personal (identity) one.<sup>67</sup>



<sup>66</sup> This can also be nicely shown in the use of language. In the supposed male world of farming Künast was always addressing “Bauern und Bäuerinnen” meaning farmers and women farmers.

<sup>67</sup> Pongratz (1991) describes the difficulties between the farmers and the ecology movement as mostly lying in cultural cleavages, he even speaks of “counter-cultures” (ibid.: 121). The ecology movement is grounded in an urban, academic environment while farmers are more conservative, traditional and non-academic. Yet, in case of Künast, the cultural cleavages are even more complex, as a Gender dimension is introduced. The typology introduced by Gill (2003) is also useful in understanding the divisions between the environmental movement, organic farmer's movements and the more conventional farmers. The former could be understood as being based on a more post-modern or romantic notion of (back-to-nature) farming within a natural environment

### 6.1.3 “Agrarwende” - turn in agricultural and consumer protection policies

In Künast's first governing speech to parliament in February 2001, the new Consumer Protection Minister followed up on Schröder's framing of the BSE problématique and outlined the new agrarian policies of the coalition government: The phrases highlighted in bold-type were soon to become the leading catchwords of the reform.

“The BSE scandal marks the end of the old type agricultural policies. (...) From now on **‘Precautionary Consumer Protection’** will be the leading principle. (...) Like never before we are forced to acknowledge the side effects of a policy driven by mass production in agriculture. (...) I put my hopes on the **“Agrarwende”**. Our motto is: **‘Class instead of Mass’** [meaning quality instead of quantity]. (...) Six actors will be decisive in whether or not the new policies will be successful: the consumers, the farmers, the feed industry, the food processing industry, the retailers, and finally the policy-makers. They together built the **‘Magic Hexagon’** of the “Agrarwende”. (...) Now it's your **choice!** (...) Do you remember the passionate arguments surrounding beer purity regulation (Reinheitsgebot) when consumers, farmers and breweries stood together as one? We need such a **‘Reinheitsgebot’** [purity regulation] when dealing with farming animals: cows need water, beats, grass and cereal – nothing else” (Künast 2001).

In this speech for the first time the concept of “Agrarwende”<sup>68</sup> entered the agricultural policy debate of a German federal government.<sup>69</sup> Although never clearly defined, it stands for a variety of different measures, which together outline – albeit vaguely - the new approach towards agri-food policies under the “red-green” government.<sup>70</sup> The cornerstone

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(alterity), the latter as being more based in traditions and conventions (identity) or utilitarian ideas about efficient farming (utility).

<sup>68</sup> The “Wende” metaphor is commonly used in German policies to indicate fundamental transformations, that is, beyond reform. For instance, German reunification is popularly referred to as “Die Wende”. The “Wende” rhetoric is also used in other cases of ‘red-green’ reform policy, e.g. energy policy “Energiewende” or forest policy “Waldwende”.

<sup>69</sup> The term “Agrarwende” was used in farming-critical circles before. The reform farming policies of the federal state Nordrhein Westfalen under Bärbel Höhn probably came, so far, closest to these demands.

<sup>70</sup> In a speech given by Künast in July 2001 in London at the occasion of the international conference: “Where next for European agriculture?” Künast outlines her vision of the future for agriculture: “Let us visualize the year 2010. I don't know what your perspective is. I see myself relaxing on a farm holiday. What a luxury after all these years of hard work as a minister for consumer protection, food and agriculture. I see myself visiting farms, which produce high-quality food and renewable raw materials. Farms which need a lot less chemical plant protection, less fertilizer and less energy than today to produce wheat, barley or maize. Instead they apply integrated or biological plant protection and modern agricultural engineering. I see bright friendly animal

of the "Agrarwende" reform policies is the new orientation on consumer protection, something strongly indicated in the renaming of the ministry. As a novel approach, agricultural policy should be formulated from "the standpoint of the food counter" (Federal Government 2001:1). To quote Künast: "consumer protection, full information about production methods and improved product quality are now the priorities" (Künast 2002a). The minister's reasoning was that consumers had, after all, shown during the BSE crisis that they largely distrusted and disapproved of the practices under the conventional agri-food policies. The focus on mass production and low food prices had become a problem-causing policy approach and should, therefore, be replaced by quality production, which entails subjective and ethical criteria, such as animal welfare or environmental protection. The new "Agrarwende" policies should this way encourage sustainable land cultivation and food production and promote consumer choices towards quality products.

Most importantly, the new ministry identifies organic farming as the most sustainable way of doing agriculture. In this sense *the* key element of reform is the support of organic farming and the increase in sales of organic products. As a policy goal it is aimed that within ten years the share of organic farming in land cultivation is to be increased by 20 percent.<sup>71</sup> Another important element in the new farming strategy is switching the EU farm subsidies Germany receives towards less intensive farming (so-called modulation), this way directing public money to those who comply with the new agenda. Finally to give the policy goal of precautionary consumer protection some more teeth, a new Consumer

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houses, with pigs on straw and calves with their herd mates in spacious boxes, with hens in coops providing a lot of space or ranging freely outside. I visit farms producing energy from manure, straw and wood. I then walk through a countryside where fields and meadows alternate with trees, hedges and ponds, countryside with animal grazing. I am accompanied by a woman farmer, acting as a tourist guide, who explains to me the particular features of her village and region and who later invites me to her farmyard café. A farmyard café with home-baked cake and flour produced on the farm. During my walkabout with her I particularly enjoy seeing so many young people. Young and cheerful people who enjoy being in a village and getting to know how and where carrots grow, how milk is produced and that you can produce many tasty products like yogurt, cream or ice cream from milk. Before my departure I will provide myself with fresh vegetables, delectable fruits and tasty cheese from the farmer's farm shop, at best produced on the farm. This sounds like a sweet dream romanticizing country life – with small farms everywhere and happy families and animals. Yes, but this is also what it could be like in the future, the nearer future if you want. And I am sure; many of us are ready to fight for landscapes and a society with agriculture playing a vital and healthy role" (Künast 2001b).

<sup>71</sup> Measures taken are, for instance, a new organic labeling scheme to enable consumers to make informed choices, etc.

information law<sup>72</sup> was to be introduced in order to strengthen the rights of the demand side in the food chain.

The “Agrarwende” has become the most important result of the handling of the BSE crisis. For the new Minister Künast it was understood that only a fundamental reorientation of farm and food policies would be able to bring back trust and confidence in the safety and quality of the food people buy and eat. Yet “trust through change” (BMVEL 2001) aimed at nothing less than a quite radical restructuring of German agriculture. In a fundamental change in production philosophy, mass production should be geared towards environmentally sustainable and animal friendly quality production. The decision-making structure in agri-food policies, hitherto consisting of a small circle of lobbyists and administrators, should be opened up and made accessible to more affected groups. And finally market relations, hitherto mainly geared towards the interests of the big producers, should give priority to alternative production relations and consumer choices.

Künast made clear that there were a number of reasons for reorienting agricultural policies, not least because European and global agricultural policy shifts demanded a reinforced market orientation. For Künast the new consumer oriented policies were far from “green romanticism” of which she had been frequently accused. Instead the minister stressed that these policies created the space for “quality competition” and provided opportunities for a development of new sources of income for farmers and regions (multifunctionality in farming) (Künast 2002a). In this sense, as Künast more and more stressed, consumer-oriented policies would be in the economic interests of farmers. “Class instead of mass” was to become a “competitive advantage in the struggle for market shares” (Künast 2003). Thus in the wake of the “Agrarwende”, consumer

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<sup>72</sup> The new consumer information law is aimed at improving the information rights of the consumer and the intervention rights of the authorities. For instance, to date only acute danger justifies the publication of names of products and producers violating food safety regulation. The law is to create the legal grounds for publication of names in all cases of non-compliance with food safety law.

protection – hitherto more considered to be a charitable factor in the hard reality of economics - became framed as a “Standort” advantage (Künast 2002b, 2003).<sup>73</sup>

#### **6.1.4 “What are ‘Agrarfabriken’ anyway? There is no need for an Agrarwende”**

Although the shock of the BSE crisis was massive and spread throughout the political spectrum, not everyone agreed on the problem definition and the remedies to take in order to solve the crisis. For instance, Angela Merkel, opposition leader of the Christian Democratic Party (CDU) said in a response to the ‘red-green’ crisis interpretation: “Mr. Chancellor, we have tried to find out what ‘Agrarfabriken’ really means, but we did not get an answer” (Merkel 2001). There was consensus to the point that the emergence of the animal disease had to be countered by radical measures, but to exploit this opportunity for fundamental reforms of the type proposed by the government was not found by all to be appropriate. However at the height of the crisis critics of the Künast line were rather restrained. After all, in public polls 93 percent of Germans had spoken out in favour of a different, more ecologically oriented agriculture (SZ 2001). Against this public and ‘published’ mood, to speak out loudly against the “Agrarwende” would have come close to political suicide.

In particular the National Farmer's Organization (DBV) had come under political attack. In his speech to the parliament, Schröder explicitly singled out the farmer's representative body and its policies as one of the main crisis causing factors. For the farming lobby the BSE crisis, and the Food-and-Mouth Disease crisis that came shortly afterwards, became a traumatic event in many respects. The DBV not only had to deal with the economic hardship of its members, but also faced a full-fledged legitimacy crisis and was publicly pilloried.<sup>74</sup> Yet, when the crisis slowly abated and beef consumption numbers returned to normal levels, critics of the “Agrarwende” started to line up more aggressively. In a speech

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<sup>73</sup> In this respect Künast quoted liberal economists, such as Adam Smith, to underscore the importance of consumer policies in capitalist markets: “Der Verbrauch ist das einzige Ziel und der einzige Zweck einer jeden Produktion und das Interesse des Produzenten sollte nur soweit beachtet werden, wie es notwendig sein mag, das Verbraucherinteresse zu fördern” (Adam Smith 1776 quoted in Künast 2003).

<sup>74</sup> Indeed, the DBV talked of the BSE crisis as a “political breach in the dyke” and showed understanding for the new demands. As the DBV monthly publication put it: “...we farmers need to be very cautious not to overstretch the societal consensus on production methods (Born 2000: 7).

at the national farmer's annual general meeting in July 2001 Gerd Sonnleitner, the president of the DBV, confidently claimed that German agriculture was not industrialized and Germany was in no need of an "Agrarwende" (Sonnleitner 2001).<sup>75</sup> Instead, he accused Künast of making the farmers scapegoats for the problems caused by BSE, of splitting the farmers into good ones ('class') and bad ones ('mass'), and in privileging a tiny minority of three percent of organic farmers while discriminating against the rest. Last but not least, in the farmer's community there was a wide-spread sense that with the new policies farmer's interests were being played off against consumer's interests (Matthiesen 2002).

In particular the plan to give organic agriculture such a prominent role in the change process prompted heated opposition. Many critics, including the agricultural academic elite<sup>76</sup>, denounced the new agricultural policy line as being based on a "lack of understanding of agricultural processes" and an "ignorance of economic parameters" while playing on unrealistic put popular ideas about an ideal agricultural world (FAZ 2001). If Germany was to follow such a precipitate policy line, so the tone, German farming would no longer be able to stand up in the "global competition for agricultural markets". Given this understanding, the DBV, and many of its supporters, concluded that the "Agrarwende" plans of the 'red-green' coalition government were not based on facts and realistic planning, but on a sentimental ideology (TAZ 2002).<sup>77</sup>

The agricultural elites were thus strongly outspoken against this propagated policy change. In the past these hegemonic social forces had successfully blocked off social demands on changing German agriculture (Schmidt/Jasper 2001). Only in 1999 at "Agenda 2000" negotiations on the Common Agricultural Policy (CAP) Germany –

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<sup>75</sup> Künast describes the hostile situation of the farmer's reunion in her book. Upon arrival she was greeted with boos and catcalls and there were posters with lines like: "We farmers have survived wars and ransacking, we will survive the Green Party! Or others: "Green craziness will break the farmer's spine" (Künast 2002: 96).

<sup>76</sup> In January 2001 33 professors of agronomy started an appeal against the policies of the Agrarwende (FAZ 2001).

<sup>77</sup> It is interesting to note that in this presentation the organic sector continues to be associated with the image of small-scale, backwards, green ideology-driven farming. This is astonishing insofar as many of the former socialist agricultural cooperatives (LPGs) in Eastern Germany had been turned into large-scale organic farms, clearly proving wrong such an unprofessional image. This critique can thus partly be understood as a discursive strategy.



represented by the social democratic Minister Funke - had delayed or prevented European activities that pointed toward more far reaching reforms.<sup>78</sup> In addition, the possibilities and opportunities provided by the "Agenda" towards agricultural change (i.e. towards the development of the organic sector) were hardly used, while in France or Great Britain they were (Ribbe 2001). In the same vein, in Germany considerations of consumer interests were delegated to the status of mere policy appendices (Barlösius 1999: 218). More restrictive demands in terms of nature conservation friendlier agricultural practices failed because of resistance from agricultural interests (Tkalec 2001). All in all, while at the European level the BSE food safety crisis had long ago triggered a "democratization process", in Germany agricultural policy continued to remain the product of a narrow coalition of agro-economic interests (Gräfe zu Baringdorf 2001: 27).

And yet although there was no fundamental dispute over agricultural policy at the regulatory level, these ideas were not unchallenged in the past. Against the widespread claims of the DBV - as speaking for *the* German farmers<sup>79</sup> - the farmer's scene and interests are far more heterogeneous than its representative body is willing to openly concede (Unabhängige Bauernstimme 2002). Support for the reform policies is thus not only coming from the green/organic corners of the political spectrum but also from small family farming communities who are tired of the singular "grow or vanish" ("wachse oder weiche") dictum of agricultural growth policies of the past (Der Spiegel 2001: 26). These various opposition forces have in the "Agrarwende" policy come together in a new

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<sup>78</sup> Franz Fischler, EU Commissioner on Agriculture, commenting on the German reform plans: "Ms Künast is very welcome. I welcome with open arms her plans to provide better and safer food for consumers (quoted in Der Spiegel 2001: 30).

<sup>79</sup> In fact, ninety percent of German farmers are members of the DBV. The DBV also represents organic farmers. The fact that almost all German farmers are members of the DBV has many practical reasons (e.g. membership is quasi hereditary). This does not, however, mean that the association speaks for the interests of all of them. In contrast, Schmidt/Jasper describe the DBV as a highly undemocratic, almost feudal institution. They assert that interest congruence is rather existing between the farmer's elite, agri-business and civil servants, building a so-called "green front". The oppositional forces, however, have never managed to organize themselves (Schmidt/Jasper 2001).

coalition<sup>80</sup>, and, more importantly, they find in Künast an agricultural minister who is pushing these hitherto marginalized interests to the fore.<sup>81</sup>

## 6.2 The new GMO discourse

### 6.2.1 Cultivation program stopped; instead new rounds of talks

Coincidentally, just at the time when the first BSE cases plunged the German agricultural and food system into chaos, negotiations on the GM cultivation programme - the "Schröder" initiative" - were due to be finalized (see Chapter five). After months of negotiations in the year 2000, the programme was finally planned to start in spring 2001.<sup>82</sup> Ironically, the same Chancellor who had just passionately spoken out in favour of respecting consumer preferences in agricultural production was about to give an official go-ahead for a technological application to which the majority of German consumers strongly objected - the contradictions could not be more obvious. At the end of January, at the height of the BSE crisis, Chancellor Schröder cancelled his support for the programme. In a letter to industry, the Chancellor's Office justified the move as follows:

"In society a rethinking about the foundations and conditions of food production has started to take hold. Only through a consumer-oriented reorientation in agricultural policies are we able to regain consumer confidence in food production. (...) The government needs to reflect on whether and in what way the common initiative on agro-biotechnology could be brought to fit into the new policies" (quoted in DPA 2001).

In the charged atmosphere of the BSE crisis, it was obviously considered not to be an opportune moment for a decision on such a highly controversial food issue. With the breakdown of the GM cultivation initiative, the task of politically handling GM food was passed from the Chancellor's Office to the Ministry of Consumer Protection because, as Schröder declared, "agro-biotechnology has a lot to do with consumer protection" (quoted

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<sup>80</sup> In October 2001 a new coalition formed consisting of environmental and nature conservation groups, agricultural groups, consumer protection and animal protection groups (Gemeinsame Plattform 2001)

<sup>81</sup> This does not mean that there is no criticism from anti-mainstream/Green groups. For instance, Third World/ Developmental NGOs have warned of new forms of "Bio-protectionism" through the "Agrarwende" due to its emphasis on regional and high quality production (Vorholz 2001).

<sup>82</sup> For a protocol of the events, see: [www.transgen.de](http://www.transgen.de)

in Riewenherm 2001: 3). The new Minister Künast was now in charge and promised to take up the issues. However, under Künast, the whole programme received an entirely different spin. Instead of cultivation, Künast initiated the "*Diskurs grüne Gentechnik*", a public debate on agro-biotechnology to start in December 2001.<sup>83</sup> Much to the disappointment and open critique of industry, the *Diskurs* was structured around open-ended, wide-ranging expert/stakeholder talks on GM crops and the appropriate agro-environmental and consumer choice criteria for their commercialisation. The cultivation plans were entirely abandoned. As further opposed to the previous "Chancellor-initiative", the new Green Party minister decided to widen participation, including basically all the stakeholders in the food chain, as well as various NGOs. To take account of the great concern among the public the *Diskurs* was widely documented on the Internet.<sup>84</sup>

### **6.2.2 The case of GM maize "Artuis": an indication for GM policy change?**

Between the cancellation of the "Chancellor initiative" in January and the start of the *Diskurs* in December 2001, the direction that GM policy would eventually take was a matter of speculation. GM critical forces in particular were concerned that the cancellation of the "Chancellor initiative" was nothing but a clever PR campaign playing on the acute sentiments of anxious consumers, and no indication of a different policy approach (Riewenherm 2001). In the same vein, the fact that Künast was endowed with political responsibility for GM food was regarded with great skepticism since the more politically sensitive area - GM crop approval – did not fall into her ministry's portfolio. Instead the approval procedure stayed with the RKI, which continued to belong to the Ministry of Health. This was, however, due to the resignation of Green Party Minister Fischer during the BSE crisis now under social democratic leadership. In the meantime, the Ministry of Health had started drafting a new GM law with the aim of transposing the EU Directive 2001/18 on deliberate release into national law. According to insiders, this draft bill did not take account of any of the changes proclaimed by the government. It seemed that at the

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<sup>83</sup> In German "green biotechnology" refers to GM technology in the area of plants and food. That is, the adjective "green" does not have anything to do with sustainability or environmental protection.

<sup>84</sup> [www.transgen.de/diskurs](http://www.transgen.de/diskurs)

time the issue of agro-biotechnology was not an official priority<sup>85</sup> and Künast was too busy dealing with other subjects of the "Agrarwende".<sup>86</sup>

However, in June 2001 the new Ministry of Consumer Protection (BMVEL) intervened in a seed approval procedure in the case of GM maize "Artuis" (T25) (in the case of seed, responsibility lies with the BMVEL). As a result of the intervention the approval decision was postponed on the basis of pending safety testing. Although there were no concrete health dangers brought forth, the ministry stated that, "out of precautionary consumer protection, approval should not be precipitated" (quoted in Transgen 2001). GM maize "Artius" had been granted full market approval as a GM plant in 1998 shortly before the European quasi-Moratorium. Austria, Italy and the UK subsequently stopped market approval out of safety concerns. "Artius" maize is mainly used as feed maize and not approved for food uses (only notified under Novel Food legislation in processed form). According to press sources the ministry intervened because it wanted to base approval on a novel food authorization in order to take account of unintended uses of the product (ibid.) This action, albeit criticized by many, inter alia the RKI (Michel 2001), was widely considered to take account of heightened consumer awareness in food safety questions as a result of the BSE and food-and-mouth-disease-phase in Germany. The seed company eventually pulled back its application in order to avoid legal and political quarrels. Instead it declared its readiness to "participate in an open and constructive dialogue for assessing the questions of agro-biotechnology" (quoted in TransGen 2001).

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<sup>85</sup> Yet internal negotiations about a stakeholder conference on agro-biotech or some such were already going on.

<sup>86</sup> In fact in the first year (2001) of her post as a minister, Künast brought about considerable changes: Apart from measures dealing with BSE (banning meat and bone meal, introduction of broad-based BSE testing, and tightening of controls and sanctions in case of non-compliance) and later the food and mouth disease crisis, Künast put much of her efforts into improving animal welfare. She introduced a new animal friendly hen legislation, which went far beyond the European Directive. She brought in legislation that introduced higher standards in pig farming, animal transport or environmental criteria for farm buildings. As a way of supporting organic products Künast introduced a new organic labeling scheme and promotion programmes for organic agriculture and regional development. Another labeling quality scheme for conventional farm produce was planned. At the European level she spoke out in favour of strengthening the second pillar of the common agricultural policy and the introduction of modulation on the national level (cut direct payment to farms and channel it into rural areas) (Jasper 2001).

### 6.2.3 The framing of the *new* consumer protection biotech policy

In critical circles expectations were running high that the changes in agricultural policy would also impact on the question of agro-biotechnology (Hofstetter/Then 2001). The decision on GM maize "Artius", a case in which Greenpeace had forcefully lobbied against approval because of supposed risks for humans, was identified as being in the "right", new direction. In the case of "Artius" even the National Farmer's Organization – not known for being overly supportive of Künast's new policy line – accepted the intervention, saying that the "BSE crisis has shown that we cannot produce without taking into account consumer's doubts" (quoted in Michel 2001). Likewise GM proponents feared that this could be the foretaste of a new "Agrarwende"-inspired GM policy line.

And in fact, as further result of the BSE crisis a new way of conceiving of agro-biotechnology applications was put forward by the Ministry of Consumer Protection, Food and Agriculture. The new biotech policy was framed around "Agrarwende" and "precautionary consumer protection", thus linking agro-biotechnology to the broader problématique of agriculture and food production. In the "Working plan on sustainable agriculture", a BMVEL position paper from September 2001, agro-biotechnology was mentioned as one of the leading factors – next to agro-chemicals, antibiotics and the lack of ethical criteria in animal use - in creating consumer anxiety and a potential loss in consumer confidence in agricultural products (BMVEL 2001). Drawing on the analogy between the problems of industrialized agriculture and GM crops, agro-biotechnology was thus portrayed as yet another paradigmatic example of agricultural and food production which was primarily directed towards serving the interests of producers rather than the consumers.

Instead, in the new biotech discourse of the BMVEL and Minister Künast "consumer trust" and the "freedom to choose" lay at the center of agro-biotechnology regulation. This new consumer protection/rights debate was set against the context of an advanced stage of GMO production worldwide and the necessity to react to these developments if a society was to safeguard the democratic right to choose. In principle, safeguarding the freedom to

choose meant to continue to be able to decide in favour of or against the consumption of GM products. In this sense, the debate drew on the rhetoric used in the Agricultural Ministry in the late 1990s.<sup>87</sup> However, it was characteristic of this new “precautionary consumer protection” discourse that it meant something more fundamental than the freedom to consume or not to consume GM products – it was about future models of agriculture in general. Minister Künast framed the question of agro-biotechnology as one of social preferences about what we eat, how we live and what structures (community farming or industrialized agriculture) we support, at a local or global level. The new “freedom of choice” discourse thus stressed options for agricultural systems and new market relations and the necessary societal decisions that needed to be taken in favour of one or the other.

The novelty of this new “consumer choice” discourse is the role it affords to consumers. The “consumer as chooser” (Gabriel/Lang 1995) takes on responsibility in shaping production agendas and the transition to more sustainable development paths.<sup>88</sup> To quote Künast, “If we give consumers free choice, they can use their shopping basket as a vote for production methods that guarantee high quality, sustainability and animal welfare, if they want to” (Künast 2001b). Yet in this new “consumer as citizen”<sup>89</sup> discourse the market place does not become a surrogate for public policies, stressed the Minister, because in order to make an ‘informed’ choice, there needs to be something to choose from and consumers need to be able to assess the quality of the foods on offer (Künast 2001a). This is where the state comes in, establishing the legal framework and information requirements and giving incentives for more sustainable production.

Thus under Künast agro-biotechnology became part of a consumer protection policy, which understood itself as a politically pushed strategy for sustainability (Reisch 2003). Künast made no secret of the fact that agro-biotechnology did not fit into her new

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<sup>87</sup> See, for instance, a BML publication from 1997 (BML 1997).

<sup>88</sup> The positive, almost idealized picture of the consumer has often been criticized in the “Agrarwende” approach. The contradictory nature of consumer behaviour, which in most cases puts price ahead of quality even while arguing otherwise, would necessarily impinge upon the success of the “Agrarwende” (Vorholz 2001a).

<sup>89</sup> That is, consumers as stewards for social and environmental aims.

preferred scenario of sustainable food production (Künast 2002). She propagated alternatives, most of all organic agriculture as a role model for more sustainable forms of farming and quality food production. In her view, and given the problems in conventional agricultural production, new technologies needed to prove their contribution toward the goal of sustainable agricultural change. More importantly, new technological applications needed to stand the test with consumers and producers and their food/feed/seed choices. This way the market could decide if there was a future for GM crops and food. This "consumer choice" strategy allows then, in turn, support of mechanisms that empower the consumer so that his or her purchasing choices translate into the according market situation for GMO products. The complementary strategy was thus to support more pluralistic ways of farming and food production, some of which are GMO-free. This was the new "consumer choice" direction the Künast line pushed for by the end of 2001, nationally, Europe-wide and globally.

### **6.3 Explaining the 'trigger' for change**

In the following section, Hajer and Sabatier's approaches will again be used to look more analytically at the changes resulting from the BSE crisis. Key concepts of both authors will help in illuminating why BSE caused so much trouble and how the animal/food crisis could spread across subsystems to affect biotech policies.

#### **6.3.1 Discourse and story-lines as in Hajer**

To recall, for Hajer understanding policy processes means focusing our attention on the discursive practices that guide the perceptions of reality and that shape the construction of the policy problem. In particular, with his approach he claims to offer a new conceptual tool to grasp political transformations and to illuminate the time and space specific dynamics of change. One of the most important conceptual tools Hajer offers for change analysis is the *story-line*. Story-lines serve crucial functions in the process of change, such as the positioning of actors, the selection of knowledge and the creation of coalitions. These story-lines, however, are not looked at in isolation but are set in a social and

historical context. Thus analyzing the reason and dynamic of change requires a detailed contextual examination of the circumstances at play in a specific case. What are the discursive dynamics surrounding BSE? What do mad cows have to do with agro-biotechnology? What are the mechanisms at play that produced the new particular reality? Using Hajer's analytical tools will provide deeper insights into the above narrative.

### **The discursive interpretation of mad cows in Germany – the power of positioning**

How to understand the fact that an animal disease could have such a dramatic effect, causing a major economic and political crisis even affecting other regulatory sectors, such as agro-biotechnology? The narrative suggests that one of the main reasons for explaining the "BSE shock" was to be found in the *discourses* lead by government institutions and societal actors *before* the event *and after*. With the first homegrown case of a mad cow the myth of "BSE-free Germany" was recognized for what it was - a myth! BSE-infected cows were a reality in the German agricultural and food system. Yet what this meant, who to blame and what to do about it was not clear. It is this principal openness of 'the problem' that Hajer brings us to focus our attention. As mentioned earlier there were many interpretations of the event offered (e.g. the Chernobyl metaphor), and the government response was contradictory and hesitant. Within such a situation of radical consumer reactions, lack of orientation and need for explanation Chancellor Schröder took the lead in crisis management and interpretation. He put forth an interpretation of the event that combined many components of the public debate into a single pervasive metaphor: "*Agrarfabriken*".<sup>90</sup>

The "*Agrarfabriken*" metaphor functioned as an important element in 'making sense' of the events. This way BSE was identified as a crisis in agricultural production for which the animal disease was an *exemplary* case of the normal, yet perverted logic of mass production and profit maximization. Speaking with the authority of the chancellor,

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<sup>90</sup> The magazine Der Spiegel (2001a: 22) suggests as one possible factor in Schroeder reacting the way he did: "Finally, over Christmas, family man Schröder began to realize why BSE would upset people's stomachs: in times of Christmas feasting nobody could sit at the tables without any worries. Everywhere they talked about the possible dangers lurking in their Christmas roast and sausages."



Schröder thus pushed an alternative reading of the event that was clearly positioning, assigning blame, trust and responsibilities. But more importantly, Schröder's framing struck a responsive chord in that it rang true with certain popular discourses in society about 'the way things work' in food production and politics in general. The BSE framing picked up on such popular story-lines as "interest capturing in the agricultural and food industry", the "lack of trust in public institutions", or the "lack of control", all in all adding to the perception of continuous scandals and disturbing practices in the food sector and a political leadership that was complacent, or worse, full of lies about this.<sup>91</sup> With Hajer we could thus say that the way in which the political elite had discursively interpreted the event it confirmed and even reinforced public concerns. The almost daily increasing number of infected cows and the simultaneous appearance of the Food-and Mouth Disease only seemed to confirm the unpleasant diagnostic claims of Schröder's account. BSE was made into a big legitimacy crisis for the food and the political system, and the reading the political elite offered maximized demands for a policy response. The "Agrarwende", as a fundamental turn in agricultural and food policies, seemed to be a radical but coherent answer to the problem.

### **The "Agrarwende" discourse and its impact on coalition-building**

The novelty of the "Agrarwende" is not so much its innovative elements per se as the manner in which it challenged the (cultural) practices of the *German* agro-food system. As the narrative showed, the German system seemed to be one of the most resistant ones in terms of 'greening agricultural production' and opening it up to interests other than the agro-industrial. Productionist practices in combination with narratives of a "social contract" between the agricultural system and the rest of society had in the past successfully managed to insulate agrarian policies from social demands (Hagedorn 1996).<sup>92</sup> For these

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<sup>91</sup> For a study giving an account of the numerous food scandals that happened in Germany during the 1990s, see (IFAV 2000).

<sup>92</sup> Hagedorn (1996: 429-449) describes this "social contract" as being built on the following elements: the agricultural system guarantees food provision, food safety, the maintenance of the agricultural land, environmental protection, broad spread of property rights, maintenance of small-and-medium sized companies, social stability and peace, and protection from communism. In exchange, society guarantees the equal social participation of farmers in society. On the basis of such an agro-fundamentalist ideology, insulated political circuits could be built relatively independent from the political system.

forces the "Agrarwende" - and "Stadtgöre" Künast - was a dangerous counter-discourse and with its emphasis on consumer choice, new governance structures and the support of organic agriculture it was said to be coming close to a "cultural rupture" (Der Spiegel 2001: 25) and a "revolution from above" (Ehrke 2001). As mentioned in the narrative, the "Agrarwende" plans resonated very strongly with the German public. The discourse of "Agrarwende" was thus empowering to the forces that had hitherto been marginalized, respectively non-present in German agricultural policy circles. Using the momentum of debate, the "Agrarwende" gave a new, *legitimate* focus to protest and on its broad linguistic basis - environmental protection, quality competition, consumer choice etc. - new coalitions of actors from various backgrounds (farmers, consumers, animal rights people, environmentalists) could be formed.

Proof of the power and legitimacy of the discourse is also given when considering the highly emotional and hostile responses to it. As shown above, reputable agricultural research institutions were starting to campaign against it criticizing the "Agrarwende" rhetoric. They mis-represented the class/mass dichotomy - which Künast introduced to seek support from conventional farmers interested in quality production - as separating conventional and organic farming, and they built up a discursive scenario of "green romanticism". In fact, some forces supporting the "Agrarwende" made a similar sounding criticism. They claimed that reforming the agro/food system was not primarily a question of organic and non-organic but of dismantling power relations within the food chain (Agrarbündnis 2002).<sup>93</sup> Given this multi-interpretability of terms and the specific use of interpretations favourable to ones political ends, the "Agrarwende" discourse reified a culturally and ideologically tainted clash between organic and conventional farming. The "Agrarwende" was thus not only creating space for new coalitions, but was equally unintentionally reproducing previous cleavages thus hindering broad-based support for

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<sup>93</sup> Thus the Agrarbündnis (2002) also criticizes Künast for building up false oppositions. After all, the role model (Leitbild) of "bäuerliche Landwirtschaft" (meaning non-industrial, rather small-scale farming) to which they adhere is not an exclusive organic affair (in fact this has been official policy of the DBV as well). Therefore, their critique focuses on the question of the power relations within the food chain and they criticize the "Agrarwende" for not addressing these problems. The DBV has also shown elements of such a critique by blaming the retail sector for its price dumping policies.

the reform efforts.<sup>94</sup> As a result the "Agrarwende" discourse has politically strengthened the organic farming community at the same time as a polarization between organic and conventional farming has gained momentum (Dirscherl 2003).<sup>95</sup> These effects are crucial for understanding the dynamic and the frictions in the new "consumer choice" and "coexistence" debate in biotech regulation.

### **The revision of agro-biotechnology policy as a product of the "Agrarwende" discourse**

Using Hajer: BSE is a physical problem, but it is the story-lines that relate the animal disease to human action and present people with an understanding of the phenomena. Given the timely coincidence, and against the background of the BSE-Agrarfabriken-producer-interests-linkage, the official GM discourse was put in an entirely different light. These specific linkages drawn by the political elite discredited the aims and means of conventional agricultural practices and policies. Yet more importantly, this rhetoric confirmed and legitimized public perception, where agro-biotechnology was framed in exactly these terms, within the context of high-tech, chemical-intensive farming associated with BSE, "turbo cows", "hormone veal", profit making interests and lax regulation (Renn 2003).<sup>96</sup> The connections drawn between BSE and the structural problems in agricultural production thus created a new discursive dynamic for GM policies. The new rhetoric confirmed the linking of agro-biotechnology, food production and farm practices; this very linking which proponents of agro-biotechnology have discredited and termed as irrelevant in biotech regulation for years.

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<sup>94</sup> In her book Künast takes up on this criticism saying that her communication strategy was unfortunate (Künast 2002). In order to counter the critics, coming from both conventional farmers as well as from the small farms association (AbL), Künast launched a "support programme for family farming ("Bäuerliche Landwirtschaft") in January 2002.

<sup>95</sup> Pongratz (1992) emphasizes in his study on "Farmers and the ecological discourse" that farmers have shown not to have a dogmatic stance against organic farming as such. While environmentally inspired critics of conventional agriculture are viewed with skepticism and rejections, the alternatively producing colleagues are generally treated with respect. It is thus more in the public that the image of a clash between "organics" and conventional farmers is being upheld.

<sup>96</sup> After all, the language German consumers heard from officials trying to quell public fears about BSE sounded identical to what was being said about agro-biotechnology: "there is no evidence of risks" or "concerns are based on speculation".

This new way of looking at the issue thus clearly undermined the official techno-scientific framing that was upheld in the past. The power of the “Agrarwende” discourse was such that the cancellation, respectively revision of the GM cultivation programme became a *credibility* issue. Proclaiming consumer interests while pushing for biotech cultivation and commercialization was not a policy option given the timing and political climate. In the same vein propagating organic farming and aiming at increasing its percentage of the industry to unprecedented levels could hardly be reconciled with biotech development. The “Agrarwende” implied a need for a policy revision if the new policy goals were to be more than just hot air. In this particular situation, the handing over of the GM food issue to Minister Künast, who at the time scored highest in popularity surveys, was a highly symbolic act. Being the sheer embodiment of change in every possible aspect, she was a very credible figure for revising agricultural biotechnology in the sense of consumer protection.

### **The “Agrarwende” discourse and the power of “multi-Interpretability”**

According to Hajer the framing of a problem predefines the direction in which solutions are to be sought. In this sense, the discursive frame of the “Agrarwende” largely changed the strategy for action in GM policies in that it broadened the frame of reference of how to talk and think about agro-biotechnology in the official regulatory arena. As shown in the narrative the “Agrarwende” discourse was made up of many different story-lines, which according to Hajer makes it especially powerful, “the political power of a text does not derive from its consistency but comes from its multi-interpretability” (Hajer 1995: 61). In this sense the “Agrarwende” discourse was much more than just an ecological discourse. Rather it combined elements from a “green consumerism”<sup>97</sup> discourse, anti-industrial, community-centered and gender critique, state interventionism, just as well as it used the liberal language of competition, consumer choice, “Standort advantage”, or market orientation. In fact, Künast’s rhetoric was to be located somewhere in-between Jose

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<sup>97</sup> In this discourse the transformative potential of consumption is predicted on changing and reorienting consumer values and habits towards quality products and quality production (process quality).

Bové<sup>98</sup> ("global uniformity of taste") and Adam Smith ("the only aim of production is consumption"), and she quotes both authors equally in her texts. Against this background of framing, "consumer trust" and "the freedom of choice" is posed as the ultimate benchmark in GM policies, as a means to reconcile all these different interests at stake. This way this new multi-interpretable GM policy discourse signals concessions to every side of the political sphere. It approves of biotechnological 'innovations', if they are wished for by the consumer. But it equally shares the skepticism, if not rejection of biotechnology by conceding a GMO-free sphere. Minister Künast, as a symbol, stood for both, not letting pro-GMO interests get off easily and not letting anti-GMO interests down.

### **"Consumer choice" within precautionary consumer protection policies**

As shown in the narrative, the "consumer choice" debate framed within the "Agrarwende" discourse is very different from the one of the late 1990s. Within this former framing consumer protection was to stand for the right to consume or not to consume GM products. Safeguarding the freedom of choice was a means to enhance consumer acceptance. The new "freedom of choice" debate, in contrast, is located within a new "precautionary consumer protection" policy. Within this policy, consumer choice goes beyond the narrow question of GMO or non-GMO. The new discourse aims at empowering consumers so that their choices are used to block or encourage specific paths' of agricultural or food innovations. Not to restrict people's choices through the introduction of biotechnology becomes a *political* risk issue because fundamental consumer rights (equals democratic rights) are at stake.<sup>99</sup> Contrary to the 1990s, the new consumer choice debate is not just an adjunct to the environmental risk debate but is superceding it. Organic agriculture becomes not just a means to avoid GM food but turns into an overall vision for future sustainable farming.

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<sup>98</sup> Jose Bové is a French farmer, anti-globalization activist and founding member of the *Confédération Paysanne*, a French socialist-leaning family farmer's organization. It was an anti McDonalds action that brought him into the international spotlight in 1999. Bové has become a leading figure in the struggle against "malbouffe" (junkfood) and globalization (Bové/Dufour 2001).

<sup>99</sup> It is, for instance, very interesting to see how the topic of GM-free food was considered in 1997 by the Ministry of Agriculture. In a FAQ section in a Ministry publication the question whether there would be GM-free food available in the future was bluntly answered with "Of course" (BML 1997).

Thus while the consumer choice rhetoric of Künast was seemingly in line with a market based liberal approach, the strategy also alluded to non-market-liberal, broader considerations opening the debate for explicit disputes about the scientific/cultural meaning of “freedom of choice” or the desirability of certain developments. In this sense the “Agrarwende”-triggered choice discourse could not longer be contained within the conventional scientific/technocratic framing of biotechnology in Germany but it re-politicized the debate. Künast’s specific account of “freedom of choice” could therefore be understood as a kind of “incremental radicalism” (Torgerson 1995) - it accepts the confines of the established liberal debates while trying to reclaim societal space over the market sphere.

### **6.3.2 Beliefs systems and policy change in Sabatier**

The narrative will now be subjected to Sabatier’s approach. How can one understand the change in developments from an ACF point of view? Can Sabatier’s theory help in better understanding the process of change? For Sabatier policy change and developmental dynamics are explained by either belief system change or through external factors. As seen in the narrative policy change has occurred, in fact, according to Sabatier’s distinction, *major* policy change has occurred as there is change in the policy core aspects of a governmental programme. Recalling the belief system tables introduced in Chapter four, it was stated that beliefs of belief system one “innovation and Standort” dominated the regulatory approach and practices to biotechnology in the 1990s. Even taking into account the tensions that existed within the different ministries (BMBF, BML, BMU) concerning biotechnology, one could say that the official policy approach brought forth by the BMVEL in 2001 stands in considerable contrast to the policy core beliefs which were dominant in the prior policy approach. The beliefs “biotechnology is useful and will help solving problems and addressing needs” or “excessive state regulation is inhibiting market forces” both are clearly not underlying the newly proposed regulatory approach of the ‘red-green’ government. This approach is rather inspired by belief system two “Risks therefore alternatives”, where beliefs such as “biotech does not serve societal needs” and “state

regulation is needed and alternative markets need to be created" are leading the policy rationale. Therefore change has occurred, but how can it be explained?

### **BSE - "external shocks" and the role of belief systems**

According to Sabatier, governmental programmes are unlikely to be significantly revised as long as the subsystem advocacy coalition that instituted the programme remains in power (Sabatier 1998). Indeed it has been seen that a major external event, such as a change in the governing coalition, occurred, however this change was in the year 1998. As shown in the transition narrative in Chapter five, there were developments within the two year 'red-green' governing period that were challenging conventional practices and beliefs in biotech regulation, however, the overall programme as such was not revised. The change in the governing coalition, even though importing conflicting policy core beliefs, was not a sufficient cause of major change.

According to Sabatier, the only way to bring about changes in the policy core aspects of a governmental programme is through some shock originating outside the subsystem (ibid.). In the narrative it was argued that the decisive 'trigger' for change is seen in the BSE crisis in the year 2000. It could be reasonably argued that the BSE crisis qualifies as such an external shock because BSE had led to an unprecedented consumer crisis with significant repercussions in the political and economic system. However, we could see that the 'necessary' measures to be taken were subject to different interpretations. Using Sabatier's idea of belief systems as interpreting lenses (thereby again relativizing the 'external shock' hypothesis), we could say that these 'facts', i.e. BSE infected cows or falling beef consumption, were being interpreted against the background of specific *beliefs*. If BSE is interpreted against the background of the beliefs held by the dominant agro-industrial coalition, it appears to be an anomaly, a severe problem that arose but which can be fixed when implementing changes to the structures - but not the principles - of the system (change in secondary aspects). Thus BSE had shaken the industry but it had not really triggered a change in beliefs, hence an "Agrarwende" was not necessary. However, against belief systems that question the rationale of productivist agriculture, the

BSE crisis confirms and reinforces specific anti-industrial worldviews and policy core beliefs. Seen from this latter belief perspective, the "Agrarwende" was a logical consequence of the BSE crisis.

But whose beliefs were to count as a basis for action? After all, the decision to radically change policies and to have an "Agrarwende" marks a huge difference to former food safety scandals. More importantly, the decision was taken by a coalition government that had obviously largely continued the agrarian policies of the former liberal conservative government.<sup>100</sup> How can this change be explained? When considering the effects to the system it may first be necessary to include the public reaction in the subsystem analysis (according to Sabatier the public plays no active part in a policy subsystem but is rather an 'external event'). The consumer boycott could be more than a fickle response to a perceived health risk, instead revealing deeply held - or at least publicly expressed - beliefs of public distrust in both the food system and political leadership. The SPD Minister Funke, and the belief systems that he represented, had been politically cornered and their ability to solve the crisis strongly questioned. Consumer and environmental factions within the SPD party were in turn strengthened (interview green parliamentary party 06/03). Facing a major political crisis, the SPD Party's "will to stay in power" made them ready for concessions, for example by installing a Green Party member as minister. The Green Party strongly supported the "Agrarwende" and had, with its Green Party Agricultural Minister Höhn in the state of Nordrhein Westfalen, credible reform expertise at its disposal.<sup>101</sup> As a clear advocate for sustainability in agriculture, the BSE crisis and its public interpretation provided a unique opportunity to promote green policy preferences, to 'show profile' and to greatly increase the power of the junior partner in the coalition government. Thus, in Sabatier's terms we could say the BSE crisis provided a "window of opportunity" for major policy change and that this opportunity was skillfully exploited by proponents of such change.

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<sup>100</sup> As the narrative showed the 'red-green' government had supported the old agrarian policy line up until the BSE crisis. In staying with the tradition of the farmer's ministry the minister chosen (Funke) was a farmer and member of the DBV.

<sup>101</sup> See footnote 10.



## **BSE-agro-biotech linkage and the role of beliefs**

With the "Agrarwende" the practices in the agricultural system, based on beliefs such as economies of scale, production subsidies, cost-efficiency etc. were replaced by policy core beliefs in sustainable production, animal protection and consumer protection. Yet the BSE crisis occurred in the food and agricultural subsystem, or more precisely in animal production. This policy subsystem is not identical to the biotechnology/innovation subsystem but they overlap with each other. According to Sabatier, subsystems are only partially autonomous and decisions in one subsystem can affect dynamics in another. BSE has problematized and reinforced this connection, but the ACF would not understand these linkages as being discursively created. More important for the ACF analysis may be that the German BSE crisis coincided 'physically' with the promotion of biotechnology (in the "Chancellor Initiative") and that actors that are part of both subsystems, such as farmers, politicians, consumers, environmentalists were concerned.

Chancellor Schröder, as a supporter of the "Standort" rhetoric and a representative of belief system one, obviously felt compelled to step back and open the biotech policies to the changes required by the "Agrarwende". Why was that the case? It could be asked whether Schröder actually reexamined his policy core beliefs and acknowledged erroneous assumptions about agro-biotech? Or one could speculate that what was seen was a mere change in strategy, giving in to popular demands ('pull back now to come back later') under the current difficult circumstances. The cancellation of the programme, or the shifting of GM food responsibility to the Künnast Ministry would then be nothing but a "strategic retreat" (Sabatier 1993: 43); The newly framed GM policies a mere side-effect, born in the exceptional circumstances in times of crisis.

In any case, the new, if only by necessity, rhetoric confirmed the linking of specific ideas and issue areas, that is, of agro-biotech and the question of food production and farm practices. Schröder's move was thus (in)directly (unintentionally) weakening the "innovation and Standort" advocacy coalition while simultaneously strengthening the "alternatives" coalition. The playing field for biotech policies had been inevitably widened.

Or, with the language of Sabatier, we could say that the “basic attributes of the problem area” had changed. The focus shifted from technology to agriculture and food. Thus, contrary to Sabatier, who considers the basic attribute of the policy problem to be a relatively stable *external* parameter, this attribute had changed in the wake of the BSE crisis, with significant consequences for further policy developments.

### **Minister Künast and the BMVEL: an example of a policy broker?**

According to the ACF, coalitions confronted with opportunities will take advantage of new situations of power. Künast, as a definite representative of belief system two “alternatives”, is interested in pushing the issue of agro-biotechnology away from the narrow considerations of biophysical effects to an area of broader concerns in the food and agricultural system. In this sense Künast can be taken as acting as a clear advocate for GM restrictive regulation and the development of alternatives. However, as described in the narrative, Künast’s aim was also to find a working compromise between the antagonistic camps – a role, which, according to the ACF, is rather played by the “policy broker” (to recall, the broker mediates between conflicting strategies from various coalitions to find a compromise and to reduce conflict). As a political pragmatist, knowing that “GMOs are reality” she, and parts of the BMVEL, sized the opportunity to introduce and promote a new policy frame which could be sensitive to the beliefs and interests of *both* opposing coalitions. But could she and her ministry be both broker and advocate at the same time? For the ACF, this dual role seems difficult to accommodate.<sup>102</sup>

In the narrative there was a description of the (unintended) polarizing effects that the “Agrarwende” triggered, however, if we focus on the brokering role of the new frame one could argue the following. Taking once again the coalition partners themselves as an exemplary case of the belief conflict in the subsystem, we saw in Chapter five that the coalition partners had no ground for a common policy. The Green Party continued to reject biotechnology on the grounds of “uncertainty” and “genetic pollution” and the SPD Party supported the development of biotechnology as a means to modernize the country

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<sup>102</sup> This is also one of the major criticisms from Hajer on the ACF (Hajer 1995: 69-70).

and to keep the "Standort". In Chapter five it was mentioned that by the end of the 1990s, there were doubts raised within the Green Party as to the feasibility of continued fundamental opposition to biotech. As members of government they needed a more 'constructive' biotech policy approach.<sup>103</sup> The SPD largely supported the "Standort" rhetoric, but there were other, more critical voices in the party, who gained considerably in standing due to the BSE crisis. Hence in 2001 for both parties the continuation of their original policy stance had become unacceptable, albeit for different reasons. In this sense, Künast, as policy broker, could be understood as launching a compromise programme, which offered a "win-win solution" (Sabatier 1998: 119) to the involved antagonistic advocacy coalitions.

## Conclusion

### *Why did GM policy change as a result of the BSE crisis?*

The DCF placed the analytical focus on the *structure of the discursive field*, which is understood as being determinative in the interpretation of the 'event' and the appropriate solutions. In this sense, the denial of the problem ("BSE-free Germany"), the deep mistrust in the agri-food system and the specific reading of the event (BSE = 'Agrarfabriken') positioned actors and assigned blame, trust and responsibility. The emergence of BSE in Germany, understood through a discourse of "Agrarfabriken", caused a fundamental *shift in meaning* of what the food safety scandal was all about - not just an animal disease, but a crisis of the productivist model and the political system. Against this background, changing policy became a *credibility issue*, and *trust* could only be restored by resorting to radical measures, such as the new "Agrarwende" policies, and by placing people perceived as having honesty and integrity in key positions, for example Künast.

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<sup>103</sup> For instance, in the wake of the BSE crisis the council of the Green Party had issued a statement supporting the "Agrarwende". In the statement biotechnology was rejected, but not primarily on environmental grounds but for protecting consumer and agricultural options (B'90/Grüne 2000).

This interpretation of the event and the remedies proposed created *compelling discursive dynamics* for GM policies and forcefully undermined the techno-scientific framing of its protagonists. New precautionary consumer policies had broadened the confines of the debate as the GM discourse became enmeshed in discussions on consumer interests, food production and farm practices. Lastly, the new "Agrarwende" and consumer choice discourse showed the *power of multi-interpretability*, that is, of a discourse based on a variety of different story-lines able to potentially reconcile various interests and beliefs and to foster a newly emerging coalition. To sum up from the DCF point of view, the initial effects of the BSE crisis can be explained with the structure of the discursive field. "Agrarwende" as a response was so powerful because it "fit" the situation, was multi-interpretable and created new situations of trust. Most importantly for the biotech subsystem, "Agrarwende" radically restructured the field of arguments and thus opened the way for policy change.

According to Sabatier major policy change, that is, change to the core aspect of a governing programme, can occur only as a result of an '*external event*'. The BSE crisis was identified as one such major event outside the subsystem, which triggered major policy change. Yet "Agrarwende" or just reforms - the crisis obviously resonated differently with different belief systems in the agricultural subsystem. Thus countervailing interpretations of what were the correct lessons to draw from BSE once again put into question the proclaimed determinate character of exogenous factors and pointed to other dimensions to be taken into account in the subsystem. In order to explain the impetus for major policy change, *publicly held beliefs* about food production needed to be drawn into the analysis. BSE was a major public crisis of confidence and as such required drastic measures. It is in this way that it undermined political support for the majority coalition and provided a "*window of opportunity*" to promote alternative green policy preferences and beliefs within the government.

The narrative also points to the *strategic dimension* in the advocacy policy process. BSE has reinforced the linkages between the overlapping subsystems, innovation and

agriculture, because of its collision with the “Chancellor Initiative” and relationships/interests of actors that are part of both subsystems. Canceling the cultivation programme and installing Künast was a *strategic act*, yet with the unintended consequence of weakening the political influence of those belief systems, which had an interest in the development of the technology. This new power balance between the coalitions allows the new advocacies in power to launch new strategies in order to promote their goals, albeit now framed in a more encompassing, flexible way. To sum up for the ACF, policy change is mostly regarded as a result of ‘external events’, strategic behaviour and unintended consequences. BSE triggered major policy change not because of altered policy core beliefs but because the majority coalition was discredited and the minority advocacy coalition could augment its importance in the policy subsystem.

## CHAPTER SEVEN

### 7. The year 2002: Biotech or “Agrarwende”? The “*Diskurs grüne Gentechnik*”

This chapter will continue the narrative and trace the developments that followed the BSE crisis. We have seen that the BSE crisis had a radical impact on both the way in which the GM issue was framed, and the conflict solution proposed by the new BMVEL. In 2001 one is faced with a new official direction in GM policies, underlain by different values and beliefs. This chapter will look at how the story evolves from that point. It will focus on the period between the end of 2001 and the end of 2002. The most important event in the subsystem is the “*Diskurs grüne Gentechnik*”, an expert/stakeholder debate on agro-biotechnology organized by the new Ministry of Consumer Protection, Food and Agriculture (BMVEL). In analyzing the *Diskurs* the following questions will be addressed: What is the impact of the new framing of biotechnology in terms of “consumer choice” and “Agrarwende” on the policy subsystem? How does this new policy language affect the scene, the actors, coalitions and their story-lines? After all, the new policy line has at that point not yet become institutionalized. How does the new policy line relate to the old (hegemonic) frames and how do these respective coalitions behave? Finally, in anticipation of one of the results, how did coexistence emerge as a major topic in biotech regulation in Germany? Using Hajer’s and Sabatier’s frameworks, the chapter will show how the dynamic of the developments could be explained and illuminated by the respective approaches.

#### 7.1 Policy narratives during the “*Diskurs grüne Gentechnik*”

##### 7.1.1 The *Diskurs*: “Coalitions in action”

A change of direction in agricultural policies and a change in the political approach towards GM crop regulation characterize the post-BSE phase in Germany. As mentioned earlier, instead of the proposed three-year cultivation programme, Minister Künast initiated the *Diskurs grüne Gentechnik* in December 2001. The *Diskurs* was the first federal forum

on agro-biotechnology of its kind in Germany and brought together over 53 experts and the whole range of stakeholders (over 30 groups) involved in GM crop politics.<sup>104</sup> The declared aim of the *Diskurs* was to bring together national and international expertise in order to assess the developments in research and application in the field of agro-biotechnology and to provide the basis for the government to transpose EU legislature into a new national law (Künast 2001c). As opposed to the previous “Chancellor-initiative”, the new Minister decided to widen participation to include basically *all* members of the food chain and various NGOs (Annex 3).

Against the background of new agricultural policies, it was the political intention of the BMVEL to strengthen the areas of consumer protection and organic agriculture in biotech regulation, resulting in a slight over-representation of these groups (Hammerbacher 2003). This way new groups were entering the field of discourse, groups that had previously not been part of, or were latent actors, in the biotechnology subsystem. Yet not only was the spectrum of stakeholders different to any official debate held on the subject in former years, but also with respect to the themes discussed, the *Diskurs* was quite a novelty. The *Diskurs* debates were structured around general and fundamental issues regarding GM crops, yet newly *including* the question of alternative non-GM options. The context of a growing application of the technology and European regulatory demands notwithstanding, the *Diskurs* was strongly thematically linked to the public controversy about new agricultural policies and consumer choice. As Künast stated in her opening speech:

“The two things are clear:

1. Consumers need to be protected. For regulators this implies to guarantee the freedom to choose between GM and non-GM food. This is a fundamental tenet with which we have to deal.

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<sup>104</sup> The BMVEL also considered the participation of medical doctors and school teachers as “multipliers of social life” contributing to public opinion formation. However, according to the moderation report, participation failed because of a lack of organization and representation on the parts of these groups (Hammerbacher 2003: 14).

2. At the same time we need to have regulation which can be upheld in the European and global context. Of course, the German economy and agricultural production need to be seen against the background of global agrarian markets" (Künast 2001c).

In the extremely polarized political landscape of the German biotech scene the various stakeholders perceived the initiative of the *Diskurs* in different ways. A commonly held opinion amongst participants was that the government was using the *Diskurs* to put off taking decisions before national elections in September 2002. However, a more general divide between the participants was reflected in the hopes and expectations concerning the *Diskurs*' rationale and results. The new agricultural Minister Künast, as Green Party member and advocate of green issues, sent out ambivalent signals regarding her stance on the GMO issues:

On the one hand Künast openly considered GMOs as a "fait accompli" meaning something that had to be dealt with and possibly contained but which could no longer be ignored. In her opening speech she said:

"I know for sure that a lot of food items already contain GMOs or are produced with the use of GMOs. There are estimates that 60 to 70% of our food is affected in one way or another by biotechnological applications" (ibid.).

A brokering around the issues of separating distances, thresholds, labeling and post-release monitoring suggested that she had basically accepted the status quo of post-Moratorium releases. Industry, although disappointed about the halting of the cultivation programme and suspicious of the new political leadership, took the initiative as a sign of opening and "acceptance of realities" and hoped for a "fact-based consensus" on biotechnology development. The environmental NGOs saw therein a possible risk of the debate, in that it contributed to an acceptance and normalization of GMOs.



On the other hand, Künast initiated a debate that dealt with issues that were so fundamental, the safety question, the question of benefits and agricultural options, that it conveyed the impression that “opting out” might still be an issue. Künast went on to say:

“The *Diskurs* is about a societal assessment of the norms and values in food production...[...]. Of central importance to me is the assessment of benefits and the possibility of control of technological developments” (ibid.).

This way the Minister nurtured the hopes in the critic's camp for, if not a definite ban, then an at least precaution-and consumer based restrictive practice for GMOs, a scenario which was off-putting for industry.

From the outset, the *Diskurs* was fundamentally divided between those that discussed the question of whether GM crop technology should be allowed to proceed and those for whom this was no longer a question and who were more interested in the question of how and under what circumstances to proceed. Yet the fact that the *Diskurs* was organized by the new BMVEL rather than an independent institution, and was thus closely connected to the pivotal decision-makers, made the event strategically important and participation of interest to both sides of the debate.<sup>105</sup>

Unsurprisingly the procedures and themes to be discussed were highly controversial. This was reflected in the themes put forth for discussion. In order to provide equal opportunity for placing subjects, experts and themes, a Steering Committee, staffed on the basis of proportional representation, was put in place.

#### **Box 2: Five *Diskurs* Rounds: Start May 2002, final results in September 2002.**

*First Round:* The preservation of biodiversity. Agro-biotechnology and its effects on biodiversity.

*Second Round:* Innovation potentials and future perspectives of agro-biotechnology. Varying opinions.

<sup>105</sup> The fine-tuning and organizational work was done by an external moderation team, called “Hammerbacher”.

*Third Round:* Benefits and risks for consumers and producers. Health, safety and food security –with or without agro-biotechnology?

*Fourth Round:* Preconditions, chances and consequences in opting out of agro-biotechnology. Is opting-out a possibility?

*Fifth Round:* Information, public participation and consumer choice. Creating transparency and public participation.

The dynamics and results of the *Diskurs* substantially influenced the interaction between stakeholders and the development of the public debate. The following narrative will focus on the main themes, the interactive process and the development of the coalition landscape during the *Diskurs*.<sup>106</sup>

### 7.1.2 “Recognizing science and facts” versus asking for more and different science

The aim of the *Diskurs* was to bring together national and international expertise in order to assess the developments in research and application in the field of agro-biotechnology. However, this fundamental question of “the status of knowledge” proved to be highly controversial. This issue came up right at the beginning, in the selection of experts to report on the various issues. The opponents of biotechnology demanded that all expert positions should be staffed on the basis of pro-contra proportional representation. The biotech proponents, however, were against this proposition on the grounds that they considered that there was no longer any question on the technology's safety (Hammerbacher 2003).<sup>107</sup> In order to prevent a stalemate an agreement was eventually reached on the pro-contra proportional approach towards selecting experts. Throughout the *Diskurs*, biotech proponents claimed that agricultural biotechnology had for many years been subject to continuous scientific testing worldwide and that GM crops had been successfully cultivated in many parts of the world. “It is important to recognize that agricultural biotechnology is a global fact” was thus the leading line in the proponent's

<sup>106</sup> The *Diskurs* will not be analyzed in all its details as this would be beyond the scope and intention of this thesis. For instance, the thesis will not look at the *Diskurs* subject of participation and conflict resolution, which was discussed in the last session.

<sup>107</sup> This was also a big issue with respect to the “*Diskurs Reader*”. This 128 page publication containing “basic information” about the subject was cross-read by a representative of each of the opposing camps (Hammerbacher 2002).

camp (Warenkette 2003). The state of the technology's safety and its increasing acceptance (suggesting the latter as being an indicator for the former) needed to be recognized. This however was, in their understanding, not the case during the *Diskurs*. Hence they criticized the debate for not being "sufficiently based on science and facts" but instead undermined by partisan interests (for example, DFG/DAF 2002).

In contrast to the reasoning of the biotech proponents stands the debate of the biotech critics. They claimed that the state of knowledge about the technology was insufficient and that there was a fundamental uncertainty about systemic - ecological *and social* - effects. Moreover biotech opponents did not accept that there was any "compelling, self-evident reality" with respect to the usage and spread of the technology.<sup>108</sup> Against the sense of ubiquity it was, for instance, argued that ninety percent of GMO cultivation was concentrated in just three countries. Thus while the GMO proponents introduced expertise that verified their "science-based" claims with respect to the technology's safety, the status of its application (Jacobsen 2001; Jany 2002) or the innovative potential (Sonnewald 2002; Friedt 2002) the opponents did likewise and introduced evidence that showed a different, more "uncertainty-based" picture of the situation (Tappeser 2001; Steinbrecher 2002; van Aken 2002). During the course of the debate the question of science/facts versus values and judgements and their relevance was a constant point of friction between the protagonists. Both sides equally accused the other of being biased and there was no agreement on the methods, the use of the precautionary principle, let alone the value priorities (Hammerbacher 2003). The debate thus dealt with classic topics and well-known arguments about risks and opportunities of biotech but was soon to move to new thematic grounds implying new linkages of old and new topics.

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<sup>108</sup> These arguments between "GMOs are everywhere" versus "GMOs are hardly anywhere" are therefore subject to strategic argumentation. Depending on how one classifies and defines the presence of GMOs or the involvement of the technology, be it based on old labeling laws, new labeling laws or even beyond that (for instance, including meat, eggs etc. produced with GM feed or contamination thresholds beyond official ones) there are wholly different but legitimate judgements possible. Of course, these, at times highly specific, legal expert differentiations and selective representations are hardly publicly communicable thus contributing to ever more public confusion on the state of the subject.

### 7.1.3 Biodiversity, the question of plant breeding and natural areas

One of the classic topics to be discussed in the *Diskurs* – and the theme that started the sessions - was the question of environmental hazard and danger. Newly labeled as “preservation of biodiversity”, the ‘old question’ of what counts as ecological damage, was placed on the *Diskurs* agenda by biotech critics. Does biotechnology have a negative impact on biodiversity and how to measure and judge the impact in the first place, so the questions asked. Alongside the problématique on wild-flora and fauna biodiversity, the subject of in-farm biodiversity was discussed. Here the issue was whether agro-biotechnology would lead to a reduction in seed variety or in-field biodiversity.

Unsurprisingly the *Diskurs* offered the whole spectrum of answers. The proponents of agro-biotechnology argued that the reduction of biodiversity was a natural process, which started when humans began to practice agriculture and animal husbandry (von Brook 2002). They argued that there was no indication for concerns that biotechnological methods would lead to a greater reduction of biodiversity and, if anything, modern plant breeding, and as such biotechnology, increased the diversity in agricultural crops and had a positive effect on in-field biodiversity (ibid.). In stark contrast to this assessment, biotech critics pointed to the complexity of eco-systemic relationships, irreversibility and scientific uncertainty in judging the effects of GM crops on biodiversity (Gaugitsch 2002; Klöpffer 2002). As they feared negative effects in terms of increased genetic homogeneity in farm crops and a reduction in wildlife fauna and flora, they argued instead for a precautionary approach, in terms of more rigorous risk assessments, including the possibility to reject certain applications of GMOs.

During the *Diskurs* these fundamental differences between the respective coalitions could not be settled. Interestingly, the debate on biodiversity led to a more basic discussion on whether natural and cultural spaces could exist and develop side-by-side and, more concretely, whether different forms of land cultivation could be practiced alongside one another. By the end it had been agreed that the preservation of biodiversity was an important element to be considered in risk judgement. The decision on the accepted level

of interference in biodiversity, both in the field and in natural areas, was declared to be a societal one (BMVEL 2003).

#### 7.1.4 Promoting biotech versus “reclaiming innovations”

The aim of the *Diskurs* was to broadly discuss the potentials and pitfalls of biotechnology and its alternatives. One big theme of the *Diskurs* was the question of “innovation potentials and future perspectives in agro-biotechnology” - a topic placed by biotech proponents and used to promote the well-established discourse on the “Standort” and ‘innovation’. The arguments that biotechnology represented a “key technology” and that biotechnology could contribute to Germany’s attractiveness as a business location were resurfacing. The respective experts brought forth evidence that agro-biotech did indeed create employment (Frauen 2002) and that the technology had a lot of future potential, especially with respect to second generation crops<sup>109</sup>, as these would quickly produce consumer benefits and offered options in the field of renewable energy sources or pharmaceutical products (Sonnewald 2002). At the same time, experts brought in by biotech opponents were countering the evidence put forward by GMO proponents, questioning the hypothetical nature of job creation, future benefits or the safety of pharmaceutical crops (van Aken 2002; Dolata 2001).

Up to this point, the arguments were rather well known and frequently exchanged. However, when it came to the question of crop innovation and agriculture, where there was a direct confrontation between biotech plant breeding and organic breeding, the question on innovation was brought into a different discourse. The organic farming expert claimed that “the discussion on jobs and innovation was too closely linked to big industry” (Fried/Niggli 2002: 2) and that what had so far been neglected was the “innovative potential of organic farming and research” (Niggli 2002) thus bringing a long-standing claim of biotech critics into the official debate. Against the background of the “Agrarwende” environmental groups, together with the organic movement, demanded a

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<sup>109</sup> The term “second generation crops” refers to transgenic crops that are not geared towards improving the agronomic properties (e.g. herbicide resistance) but rather the nutritional or health value of the crop (e.g. “Golden Rice”).

change in research priorities, a "*Forschungswende*", as a logical result of new agricultural policies and a promotion of organic farming (Öko-Institut 2002). Moreover, the discussion on innovation was turned into a debate on different approaches towards developing solutions to agricultural problems, rather than a debate on agro-biotech per se. As a result of this discussion - and so stated as a result of the *Diskurs* - participants agreed that conventional plant breeding had a lot to offer and that its potentials needed to be developed. Likewise, it was agreed that knowledge about molecular genetics was equally useful for both approaches, however, where to draw the line between 'good' and 'bad' biotechnology was now under dispute (BMVEL 2003).

### **7.1.5 Sustainable agriculture and food production – with or without biotech?**

As shown above, with the BSE-crisis a new light had been cast on the question of sustainability in agricultural and food practices in Germany. The discussion over alternatives to intensive farming in relation to biotechnology is not new to the German GM-controversy. Already in 1993, in the framework of the "WZB technology assessment procedure on herbicide-resistant crops", the dispute over which form of agriculture should be developed was identified as "the real core of political disagreement over transgenic herbicide-resistant crops" (van den Daele et al. 1997: 80). However, at the time the demand for broadening the frame of reference to include the debate on alternatives was dismissed. In the meantime these discussions had been mostly confined to the margins of the controversy. As the *Diskurs* posed the question of biotech regulation against the background of new agricultural policies and consumer choice, and given the special attention toward organic farmers and consumer groups, the theme of sustainable agriculture and biotechnology thus featured prominently in the *Diskurs*.

In the past the discussion on the subject of sustainability and biotechnology had been multifaceted. On the critic's side, the discussion ranged from demands such as that GM crops should be measured against higher environmental standards than their conventional counterparts, to more radical claims, such as that sustainability and biotechnology were intrinsically incompatible. The other side covered a similar spectrum, from arguments such

as demanding higher standards for GM crops was discriminatory, to claims that biotechnology was the key to sustainability in agriculture. Post-BSE, these accounts have found increasing use in the German debate, but with new twists.

During the *Diskurs*, the problématique of sustainability and biotechnological agricultural methods was pushed with great effort by biotech *proponents*. Promotion of biotechnology was turned into a questioning of both the approach taken in the “Agrarwende”, whereby organic agriculture was to be promoted, and the fundamental principle of organic farming, that it should be GMO-free. While in the “Agrarwende”, organic farming was put forward as the most sustainable approach to agriculture, biotech proponents strongly contested the view that organic farming represented the superior model in terms of environmental impacts or quality food production (Jacobsen 2001, DFG/DAF 2002). Instead they claimed that agro-biotechnology was at least equally viable if not a superior alternative.<sup>110</sup> More specifically, it was claimed that a false distinction had been built up between biotechnology and sustainable farming practices, as there was no scientific reason to exclude GM from organic agriculture.<sup>111</sup> Accordingly, biotech proponents brought in expertise supporting their views:

“biotechnological methods could be supportive of the aims in organic farming and help in solving specific problems” (Schön 2002). Or “biotechnology enables the sustaining of agricultural land and nature protection areas in the face of rising demands for food and land” and that in this respect “the precautionary principle even demanded the use of biotechnological applications” (Maxeiner 2002).<sup>112</sup>

Unsurprisingly biotech opponents did not support these views. They claimed that biotechnology and the principles in organic farming were not compatible as both

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<sup>110</sup> A common reference to illuminate this point is made with respect to the use of copper spraying against fungal disease in potatoes in organic farming. It is argued that this problem could be solved in a more environmentally friendly way if genetically modified varieties were available (Warenkette 2003).

<sup>111</sup> This view was also stressed in personal interviews RKI 06/03, BBA 06/03.

<sup>112</sup> In the third discourse round on health, safety and food security, the question of agro-biotechnology and its potentials for improving food security in developing countries took up a great deal of attention (2 presentations on the subject). In one presentation agro-biotech was rejected on the grounds that it did not solve malnutrition and could instead further worsen food security (Spangenberg 2002). In the second presentation it was argued that the world food problem could only be solved if new technologies were introduced (Virchow 2002). In the end it was agreed that agro-biotechnology was just one possible contribution to a solution of the problem of hunger and malnutrition.

technologies had very different approaches towards the subject and were pursuing different agronomic goals (Leopold 2002).<sup>113</sup> More importantly though, the subject of sustainable food production and biotechnology brought forth the question of whether and to what extent the use of biotechnology would impinge on organic farming - still considered to be the most sustainable form of farming by many participants of the *Diskurs* - as mass cultivation of GM crops and an extension of the organic sector would necessarily come into conflict.

#### **7.1.6 Contamination, outcrossing and gene flow – new aspects of old facts**

As mentioned before, by the end of the 1990s the topic of outcrossing, gene flow and contamination had become an increasingly important subject in the German biotech debate. In a rising number of cases transgenics had been detected in seeds or in supposed non-GM or organic plants. Traces of GMOs had also found their way into organic feed stuff, and studies presented by consumer organizations revealed high levels of contamination of food products containing GM maize and soya (Transgen 2000). In early 2000 the issue of outcrossing also caused trouble with respect to nature conservation, when an approval of a herbicide resistant oilseed rape test sight came under attack because of fear of gene influx into “ecologically sensitive areas”. Up to the end of the 1990s the question of outcrossing was primarily discussed as an environmental risk issue. After it had been scientifically established that gene flow did indeed occur, the disagreement between the protagonists moved on to the question of its ecological relevance. Biotech critics claimed that gene transfer qualified as environmental harm because of its unknown effects, uncontrolled spread and persistence in the environment (Brauner 2002). Biotech proponents kept rejecting this opinion based on the argument that gene-flow was a “biological principle” - having nothing to do with genetic modification

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<sup>113</sup> In one of the presentations it was argued that next to a commitment to a moral ecology organic farming was based on “vital quality” (Lebenskräfte). Vital quality refers to an extended quality concept in organic, more specifically, in biological-dynamic farming (based on Rudolf Steiner) which includes non-material criteria (Leopold 2002). Unsurprisingly some stakeholders had reservations about the concept as they considered it “ideological” and highly questionable from a scientific point of view. Whether these ideas are compatible with other, more “minimalist” approaches to organic farming is also questionable. Conceding that the concept of “vital quality” was indeed based on a different understanding of science, the presenter nevertheless argued that it still represented a legitimate interest and therefore needed to be respected (Schön/Leopold 2002).



- and was hence acceptable and safe as long as there was no advantage in selection. This difference in opinion was generally confirmed during the *Diskurs*, and remains unchanged today.

However, the problem of unintended gene-flow from GM crops to non-GM crops takes on a new quality in relation to the question of consumer choice. How can those who want to guarantee consumer choice prevent crop-to-crop gene flow? How can contamination be prevented along the food chain? The discourse on choice presupposes two production systems, GM and non-GM, that can be run independently and simultaneously. However, since it has been proven that crop-to-crop gene flow in the field and admixtures in the market occur, the widespread release of GMOs ultimately jeopardizes consumer choice. A more far reaching consequence is that the unintended spread of GMOs in the field and the food chain would also mean the end of the organic sector. This potential scenario was especially precarious against the background of the newly propagated agricultural policy, which aimed at increasing the percentage of organic farmers to 20 percent. Given the basic premises of the *Diskurs* as "guaranteeing the freedom of choice" as one of the leading principles in biotech regulation, and the stress on consumer protection and organic farming the most salient issue discussed between the protagonists became the question of "coexistence" between GM and non-GM crops.<sup>114</sup>

### 7.1.7 From consumer choice to coexistence

Coexistence became the catchword of the *Diskurs* as the possible ultimate compromise between the opposing parties. Yet major arguments arose as to the basis on which such a compromise could be reached. The subject of managing coexistence under circumstances of gene transfer and global agricultural sourcing markets was most of all

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<sup>114</sup> The problem of coexistence of different production systems, of separation and control thereof, became very plastic when, during the *Diskurs*, in June 2002 a contamination scandal broke out in the organic food sector. During regular routine testing organic wheat, passed down the food chain as animal feed in poultry, was found to be contaminated with the pesticide Nitrofen (long ago banned in conventional farming). This contaminated organic wheat was stored in a warehouse in the former East Germany, which had previously been used for storage of pesticides. The scandal triggered a major crisis in public confidence in the organic sector and threatened the core of the "Agrarwende". The organic industry was shaken to the bones, facing EU wide product bans and a major backlash in public opinion. As a result of this scandal, the organic farming and food sector underwent major restructuring processes, leading, amongst other things, to the founding of a new political representational body, the Organic farming and processing association, the BÖLW.

disputed in the question of labeling, thresholds and responsibilities. With respect to traceability and labeling, the environmental and consumer groups and the retail sector favoured full process-based labeling schemes, while an alliance of the biotech industry, research and the food sector argued that such a scheme would be unwarranted and unworkable (Gesprächskreis Grüne Gentechnik 2002; Bergmann 2002). In the same vein, GMO proponents defined coexistence on the basis of 'practical', meaning high, contamination thresholds (up to 5% in food, up to 1% in seed), whereas environmental and consumer groups initially understood coexistence and choice as clear-cut alternatives, that is, GMO-free meaning 100% free, not tolerating any contamination ("zero tolerance").<sup>115</sup> Accordingly proponents declared that 'zero tolerance' would mean the end of field trials and commercial options for agro-biotechnology (Schiemann 2002) while opponents claimed the same fate for GMO-free agricultural and food options in case a 'zero tolerance' policy was dismissed (Müller 2002).<sup>116</sup>

This posed the question of who should be responsible for preventing or minimizing the presence of GMOs in the food chain or in the field. On the side of biotech critics, including environmental NGOs, organic farming and retail and consumer groups it was argued that the costs of the separation of markets should be borne by those who introduce GMOs. Yet the groups of biotech proponents mentioned above but in this case *including the retail sector*, argued against this proposition (Moldenhauer 2003a). Another point related to the subject and directly connected to the issue of coexistence was the question of liability. This was a subject brought forth by biotech critics as it dealt with the issue of environmental and economic damage (Wollenteit 2002). There, one of the main critical points of discussion turned out to be - again - the problem of outcrossing and contamination. Would unintentional introgression into non-GM plants be considered as

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<sup>115</sup> Originally the 'red-green' government entered the debate with a proposal on threshold for adventitious presence in food of 1 %. With respect to seed thresholds, the language used was "below 1%". This position was strongly criticized by GM opponents. After the European Parliament had positioned itself in summer 2002, Minister Künast finally also opted for the "below 1%" line. The "as low as possible line" with respect to thresholds in general was laid down in the coalition agreement.

<sup>116</sup> During the *Diskurs*, there was disagreement on thresholds within the critic's camp. I.e. consumer NGOs and organic farmers were leaning towards higher thresholds out of fear that otherwise there would be practically nothing left labeled GMO-free. They urged the environmental NGOs to drop their reluctance and start negotiating about separation distances, costs and other practical steps to be taken to make coexistence and "pseudo-choice" possible (interview vzvb, 06/02).

(property) damage and thus trigger liability claims, as, for instance, suggested by a study commissioned by the Environmental Agency (UBA 2003). The parties could not reach an agreement.

However, as the discussion - and the persistent picking up of this theme during the *Diskurs* - increasingly revealed, these issues of separation and conflicting interests between organic (non-GM) farmers and conventional farmers using transgenic varieties would be a central problem to be solved in future regulation. The freedom to choose, as it turns out, was not only an issue for consumers but also for producers. In the end the *Diskurs* clarified that coexistence on the basis of 'zero tolerance' was impossible to reach in the fields, or too expensive to be realized in the market. The preservation of an entirely GMO-free agricultural and food production was therefore dropped, against resistance from environmental groups. Nevertheless to guarantee consumer and producer choice was identified as one of the main common concerns in agro-biotechnology as a result of the *Diskurs grüne Gentechnik* in Germany (BMVEL 2003). However, in the end no consensus could be found as to whether regulation needed to be in place before cultivation was resumed, or whether regulation could be introduced gradually alongside cultivation.

## **7.2 Explaining discursive formations and developments during the *Diskurs***

In the following section, Hajer and Sabatier's key concepts of discourse and beliefs will be used to illuminate the developments and trajectories during the *Diskurs grüne Gentechnik*. In particular, their different ideas of policy learning in relation with expert deliberation will be more closely examined.

### **7.2.1 Discourse and story-lines as In Hajer**

How can one use Hajer's analytical categories to illuminate distinct features of the *Diskurs*? When one looks at the narrative one can see that in the *Diskurs* the variety of different framings of the GMO issue that had dominated the discursive landscape in the past were resurfacing. Many of the discourses and story-lines, such as "Standort", "sound

science" or "uncertainty" were familiar and were again being used to sustain the agendas of the respective coalitions. Yet there were new discursive formations arising, linking these old framings to new issues (and groups) in a particular way. Using Hajer's analytical lens one can clearly see how the new "consumer choice" and "Agrarwende" discourse had a big impact not only on the set up of the *Diskurs*, but also on the argumentative structure of the protagonists. Moreover, against the background of new agricultural policies, the topic of outcrossing and the prospect of mass cultivation brought to the fore issues that had not been part of the earlier official debates. Through the dynamics described below, the choice discourse turned into a more fundamental discussion about the different spheres of consumption and production, finally merging into the coexistence debate.

#### **Discursive mechanisms at work, some examples:**

##### **The "Agrarwende" discourse: changing actors and themes**

The framing of biotechnology as a fundamental matter of agricultural and consumer policy has increased the number of affected and hence *relevant* actors in the field. More importantly, the "Agrarwende" and "consumer choice" discourse has positioned organic and consumer organizations as *central actors* in the subsystem. Their special concerns and newly gained importance in the course of the BSE debate made their overrepresentation even acceptable to other groups (Hammerbacher 2002). This in turn led to preferred terms and issues of the environmental, consumer and organic farming organizations, for example on questions of legal arrangements between GM and organic farming, finding increased entry into the debate (*ibid.*). In fact, as could be seen when analyzing the documents, these critical issues were introduced in multiple ways and were basically being incorporated in all the discussion protocols of any *Diskurs* round.<sup>117</sup>

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<sup>117</sup> All discussion protocols can be downloaded at [www.transgen.de/Diskurs](http://www.transgen.de/Diskurs).

## **Appropriating the same language for different discourses**

As the narrative shows, during the *Diskurs* the “Agrarwende” had become *the* important discourse in which actors could credibly express their concerns and interests. The “Agrarwende” and new food policy rhetoric was linked to every statement in the field, yet defending entirely contrary positions: Biotech was promoted on the grounds of new agricultural policies and rejected with the same arguments. During the course of debate terms hitherto exclusively confined to specific coalitions became part of the framing of counter coalitions. The terms “innovation” and “Standort” were appropriated in the communicative strategy of biotech opponents when propagating alternatives (thus characteristics attributed by biotech proponents come to be wielded as sources of resistance). Likewise biotech proponents came to deploy the “precautionary principle” and the concept of “sustainability” when propagating a biotech offensive. Therefore, on the basis of language we could observe a convergence in the terms used by each coalition, with the effect of diluting the meanings and associations with specific groups (who is progressive/anti-progressive, who is pro-science/anti-science, whose methods/aims are valid?). According to Hajer, this is part of the “argumentative game” between discursive coalitions, which may intensify conflict and re-polarise along new lines but could just as well help in overcoming constructed borderlines between coalitions.

## **Redefining and broadening expertise**

As shown, the *Diskurs* went well beyond the question of biophysical safety of biotechnology to include “norms and values in food production” and the issue of choice and control. In articulation with these broader discourses, a redefinition of key issues has taken place. Risks and uncertainty, formerly confined to environmental and health aspects, have come to be expanded to include such things as the loss of consumer and producer choice, the question of agricultural and food options and food security in developing countries. The concept of risks and expertise in agro-biotechnology has been extended and new knowledge (on organic farming, nature conservation, crop separation, insurance questions) has found its way into the debate and was given legitimate meaning.

For Hajer, this is not only a matter of introducing new labels but it constitutes a material practice of transformation as the confines of the former 'risk and opportunity' debate have been greatly expanded and more/different things can be discussed.

### **Bringing politics back in...**

The dynamic of the new *Diskurs* and the constellation of actors has triggered a situation in which experts have come to be officially and directly confronted with counter-expertise of the sort previously confined only to niche discussions (for example the question on alternatives). This had the effect of conferring meaning and legitimacy to these marginal accounts, which would otherwise have been perceived as 'unscientific' or not belonging to the subject matter in decision-making in biotech policy. The principle of proportionate representation, according to which expert positions became classified as pro-contra stances, additionally questioned the popular idea that science could be some sort of neutral judge for the solution of policy problems. Instead, the use of science became part of the discursive process, while the debate shifted away from scientific arguments.

Protagonists were forced to articulate and negotiate the political issues that were at stake in biotech regulation and to make them contestable instead of denying them and vilifying certain groups and their positions (as, for instance, happened during the WZB procedure in 1993). This way the *Diskurs* became a site for the deliberation of the *social* confrontation inherent in agro-biotechnology. For Hajer, opening the science-politics border means dismantling one of the crucial practices on which discursive dominance is built.

### **From technology to agriculture: 'learning' as redefining issues**

Under conditions of GMO cultivation, the "Agrarwende" discourse and the demand for "freedom of choice" and GMO-free spheres, a new policy discourse on coexistence emerged. This new discourse shifted the focus from the regulation of approval procedures and consumption to the sphere of production and the creation of regulatory demands that safeguard non-GM options. In the wake of this shift an issue for technical innovation policy

becomes one for agricultural policy. This also puts the focus of attention on another set of actors, those responsible in the fields and in production, and on their practices. This fundamental shift in the 'nature of the policy problem' within the biotech subsystem may be one of the most important results of the *Diskurs grüne Gentechnik*. In the process of deliberation actors have come to learn a different way of looking at the problem. The *Diskurs* as such did not resolve the policy conflict between the antagonizing coalitions yet, in Hajer's sense, it could be understood as having acted as the "clarifying force" (Hajer 1995: 283), the platform for debate as part of a reflexive practice which was oriented towards the *construction* of the policy problem.

### **Minister Künast – an agent of discursive change and coalition catalyst**

In Chapter six the way in which Künast radically changed the terms of the biotechnology debate in Germany was analyzed. The new policy discourse that she initiated set the frame for the *Diskurs* and, as shown above, this was well reflected and transformed in the negotiations between the stakeholders. Moreover, because of the Minister's distinct personal commitment and mediating role, the *Diskurs* took place the way it did and protagonists stayed involved till the end, despite major arguments that arose between the groups (Hammerbacher 2003).<sup>118</sup> Given Künast's important political and personal role in the process of change it is not only interesting, but also analytically important to see how she perceives and reproduces the argumentative exchange of the *Diskurs*. Drawing on Künast's speeches relating to the *Diskurs* one can give an illustrative account of discursive change. To this end, the opening speech to the *Diskurs grüne Gentechnik* and the closing statement of the Minister held one year later will be compared. By analyzing the argumentative structure of these two texts one can identify some interesting changes in story-lines. This way Künast's speeches can serve as important examples of how story-lines are reproducing and transforming discursive orders by creating new discursive coalitions.

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<sup>118</sup> In case of the WZB technology assessment procedure in 1993 the environmental groups walked out of the process due to irresolvable conflict.

The texts are compared in Tables 6 and 7. When looking at the tables one can see how the original discourse on "consumer choice" and "consumer trust" expands to include the protection of producer's rights, bringing coexistence to the fore of policy goals in agrobiotech regulation. More importantly, this way of reasoning is opening up ways to expand the discursive coalition of biotech critics to include *all* producers – not just the organic ones. One can furthermore see how a discourse on technological skepticism turns into a discourse on technological pluralism thereby moving away from a principal questioning of biotechnology to a more differentiated, negotiable view of technology assessment and the comparison between different problem solving approaches ("sustainability check"). Künast launches arguments of cost-benefit considerations to counter biotech proponent's often only implicit cost-benefit calculations while at the same time this offers an opportunity to prominently place the use of alternatives. With problematizing violations of the rights and free choices of consumers and producers through contamination, Künast introduces new story-lines of "uncertainty" (thus increasing uncertainty on top of the already existing risks). This allows her to supply biotech critics with a rationalized set of arguments to argue for rigid regulation and to dispel accusations of "anti-biotech fundamentalism". Using Hajer's analytical lens one can see how Künast is providing the language to attract old and new actors in order to build a grand discursive coalition that argues for strong regulation - whatever their motives (beliefs, interests) may be.



Table 6: Künast opening statement, *Diskurs grüne Gentechnik*, December 2001

Story-lines	Discourse
"Consumers no longer trust agriculture and food industry" "New technologies cannot be introduced against the will of consumers"	Consumer trust
"Consumers have a right to choose" "Consumers have a right to a high level of protection" "Developments need to be transparent and participatory" "Products need to be labeled to be clearly identifiable"	Consumer protection Consumer rights
"There is a need to check benefits for society" "Technical developments need to be controlled" "We need to create the conditions for responsible use" "We need to clarify the risk potential" "We need to consider alternatives" "We need to be responsible with regard to field trials" (outcrossing)	Technological skepticism
"We need to decide how to produce our food" "We are responsible in a global context" "There is a need to check whether agro-biotechnology contributes to better food security or whether it worsens dependencies" "We need to consider alternatives"	Food security/Food safety

**Table 7: Künast closing statement, *Diskurs grüne Gentechnik*, September 2002**

Story-line	Discourse
"Right to choose maybe most important issue with respect to agrobiotech", that is: "Labeling and traceability need to work" "Thresholds need to be as low as possible" "Coexistence needs to be assured"	Consumer <i>and</i> producer's rights
"Conventional plant breeding offers great developmental potential" "Molecular knowledge should be used in conventional breeding and organic agriculture" "There is a need to strengthen research in sustainable agriculture and farming" "New technologies offer opportunities and risks – sustainability check should clarify which path to follow and which developments to stop"	Technological Pluralism
"Healthy nutrition is guaranteed without biotech" "Hunger is more a question of distribution" "Biotech might possibly worsen problems of food security" "We support other approaches towards plant breeding" "Everybody worldwide has a right to choose (GM food aid)"	Food security/Food safety
"What are the effects on biodiversity?" "We need to clarify the question of ecological damage" "We need to start considering the effects (social, ecological and economical) of our actions onto the future"	Risks and ethics

### 7.2.2 Belief systems and policy learning in Sabatier

How can one understand the dynamic during the *Diskurs* from an ACF point of view? How can the developments be somewhat illuminated by focusing on the belief systems that were introduced in Chapter four and on policy learning, another important category in the ACF? To answer the questions this section will look at what Sabatier has to say about professional expert debates in the policy process, the role of (new) beliefs therein and the process of learning.

## The *Diskurs*: a professional forum to facilitate policy learning?

Within the general process of policy change the ACF has a particular interest in policy learning. To recall, policy oriented learning refers to a “relatively enduring alteration of thought... which results from experience and/or new information (Sabatier 1998:104). Policy oriented learning involves increased knowledge of problem parameters and it is instrumental since it is used to further policy objectives. Policy learning can affect policy core beliefs, but most policy learning manifests itself only in the secondary aspects of a belief system or a governmental programme. As belief systems are quite resistant to change, Sabatier specifies the conditions under which policy learning processes, both within a coalition’s belief system and across belief systems of different coalitions are likely to occur. According to the ACF (Jenkins-Smith/Sabatier 1993), a “productive analytical debate” (ibid.: 48) which is conducive to learning depends upon three things: A) The level of conflict, which is dependent upon the degree of incompatibility of basic beliefs. When deep core beliefs are in conflict learning, in terms of changing core beliefs, is unlikely. B) The analytical traceability of the issue, meaning learning is more likely when there are commonly accepted analytical theories, concepts and sources of data. Finally, learning is facilitated in c) the presence of a prestigious professional forum, requiring the participation of experts from various coalitions.

Applying the above given learning conditions to the *Diskurs grüne Gentechnik* allows illumination of some of the dynamics presented in the narrative. The biotech conflict has already been classified as being one between deep core beliefs of different coalitions. This basic characteristic of high-level conflict was also reflected in the whole process of the setting up of the *Diskurs* and during the discussion rounds. The intention of the BMVEL was to provide an open forum for the expression of a wide range of issues and the collection of knowledge, with the aim of preparing the ground for political decision-making in the area. The *Diskurs* was thus to provide a platform for a debate between stakeholders in which all of the arguments and interests inherent in the conflict were openly discussed. However, as laid out in the narrative the high level of disagreement

between the stakeholders resulted in expert positions being staffed according to interest positions.<sup>119</sup> This way the *Diskurs* became a pro-contra expert forum in which the blurred lines between experts and stakeholders and science and politics became a constant point of friction. For the ACF, such a politicized forum - in which analysis and the provision of facts and expertise was used to back up competing belief claims and in which there were no common criteria for methods and norms - is not conducive to the conditions for deep core policy learning. Instead, in such a situation the exchange of information between the coalitions results in a "dialogue of the deaf" (Jenkins-Smith/Sabatier 1993: 55).

### **Policy learning on secondary aspects and strategies**

However, one could argue that learning has taken place, but not so much on the level of deep core beliefs but on the level of secondary aspects. As a result of the reform exigencies of the "Agrarwende", every coalition had reacted and changed their argumentative strategy in order to either protect or to push their core beliefs. As could be seen in the narrative, the new Künast line especially put pressure on the communication strategies of biotech proponents. As a reaction to new agricultural policies they had argued their case with "sustainability", yet without this being an indication of a rethinking of their basic policy approaches - which were unchanged - but rather in an effort to incorporate new information, and to adapt their belief system to new pressures. Likewise when the biotech critics talk of "innovation" they do this not because they have all of a sudden turned into liberal advocates or technophiles, but because it self-consciously pushes their cause as progressive (that is, not anti-modernist), this way qualifying the exclusive claims of their opponents. In both cases pressures to modify beliefs systems have resulted in learning processes, but only on the level of changes to argumentative and instrumental strategies, there was no convergence on the basis of policy core beliefs.

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<sup>119</sup> In fact, in the report of the moderation team this 'expertise in proportion' was classified as an important trust building measure between the protagonists (Hammerbacher 2003).

## Policy beliefs, new issues and new actors

However, this does not mean that nothing has happened. Sabatier holds that subsystems can change because of “concerns with a relatively new issue” (Sabatier 1998:114). In simplified terms one could say that the focus on freedom of choice and the “Agrarwende” has brought new concerns and new actors into the policy arena (Sabatier very much blackboxes this process). The ACF would assume that beliefs are extended to new issues. One could argue, as was done above, that the “Agrarwende” demands were made to fit into the belief structure of both advocacy coalitions. However, what about those new actors; those, which are relatively fresh to the scene and are not (necessarily) part of an advocacy coalition and which are unfamiliar with the debates? These new actors may have their worldviews and interests but do not (necessarily) have established or strong policy core beliefs concerning agro-biotechnology. Instead, as the Moderation report confirmed, some of these actors, especially the conventional farmers, adopted a wait-and-see strategy making their policy position dependent upon the clarification of risk and acceptance issues (Hammerbacher 2003).

Sabatier does not claim that everybody who belongs to the policy subsystem is part of a coalition, but he certainly holds that the *politically important actors* do have established and stable policy core beliefs. However, who and what is important in the policy field has changed over the course of debate, as shown in the narrative. This means that policy core beliefs and their relevance can be contingent. For instance, whether gene-flow is portrayed as a ‘natural’ process or potentially dangerous, or whether gene-flow is classified as normally occurring “admixtures” or business damaging “contamination” depends upon the belief system and the argumentative power of its beholders. As GMO protagonists have lost discursive dominance in the wake of the *new* debates gene-flow has become a definite problem. Especially those who in the past expressed uncertainty with respect to the judgement of, or the vulnerability towards the issue all of a sudden find themselves and their daily practices in jeopardy.

During the *Diskurs*, the question of gene-flow and admixtures/contamination has become one of the most salient political issues with respect to biotech regulation. The argumentative developments during the *Diskurs* were not independent of beliefs as these framed accounts of "Agrarwende" or "innovation". However, against the focus on consumer choice and new agricultural policies those arguments began to resonate differently with new actor's worldviews with hitherto unspecific policy core beliefs. These arguments changed the perceptions of the problem and thus *created* specific policy core beliefs. It is in this sense that new issues create "fluid situations" (Sabatier 1998: 114) because they change the composition of the subsystem and stir up established advocacy relations with a potential to tip the balance of the status quo.

## Conclusion

The aim of this chapter was to answer the following questions: What is the impact of the new "consumer choice" and "Agrarwende" debate on the policy subsystem? How does this new policy situation affect the scene, the actors, coalitions and their story-lines? Finally, how did coexistence emerge as a major topic in biotech regulation in Germany?

Using Hajer's toolbox we could illuminate the *Diskurs grüne Gentechnik* by understanding it through discursive mechanisms being at work. It could be demonstrated that the new framing of biotechnology increased the number of affected and relevant actors in the field and that it *positioned organic and consumer organizations as central players* in the subsystem. The strength and symbolism of the "Agrarwende" discourse had an impact on the biotech framing of all the actors, also with the effect of diluting meanings of terms and associations with specific groups. Given this new emphasis, new meaning and legitimacy was conferred to counter-expertise formerly confined to the margins of the debate, concepts of risk and uncertainty were broadened and the *political nature* of the problem was openly brought forth (this being a *condition* for open deliberation in the DCF). Most importantly, the discursive shifts could explain the fact that the former focus from the regulation of approval procedures and consumption was newly moved to the sphere of production, creating regulatory demands that safeguard non-GM options. For the DCF,

the resulting coexistence problématique means a *fundamental shift in the 'nature of the policy problem'* and thus offers new ways of approaching the issues. This, in turn, creates new possibilities for incorporating and attracting old and new actors and for building discursive coalitions that argue for strong regulation - whatever their motives may be. From the DCF point of view, the *Diskurs* was thus a very important vehicle for policy change.

The *Diskurs grüne Gentechnik* provided a good opportunity to apply central tenets of the ACF. How do advocacy coalitions behave and policy learning possibly occur in the circumstances of direct interaction? As belief systems are quite resistant to change, Sabatier specifies the conditions under which learning processes are likely to occur and singles out three features. However, it could be demonstrated that the *Diskurs* did not fulfill any of these conditions as it was featuring a high-level conflict, a very politicized forum and was overall not committed to common criteria for methods and norms.

Accordingly, in such a situation, Sabatier's approach would suggest that policy change on the level of core beliefs across belief systems is unlikely and coalition interaction is similar to a "dialogue of the deaf". However, the idea of cognitive change and strategic action can explain how pressures to modify belief systems have resulted in learning processes on the level of changes to argumentative and instrumental strategies. The fact that they all talk about the "Agrarwende" and the severity of contamination, in turn, triggers a different perception of the issues at hand. New actors, unfamiliar with the policy subsystem and with unstable policy preferences become central in the debate, with a potential to shift the balance of the status quo. From the ACF point of view the *Diskurs'* relevance as a feature in policy making is under-acknowledged, as there seems to be no great effect in terms of major belief system revisions caused by scientific information. However, it could be argued that it is belief systems that explain the action that advocacies take in light of external pressures and that it is due to these deliberate interactions that issues can change and external actors get drawn into the debate. This way actors and issues can go beyond the "dialogue of the deaf" even though policy core beliefs of major coalitions remain the same.

## CHAPTER EIGHT

### **8. The year 2003/early 2004: Institutional innovations and the regulation of coexistence**

This final empirical chapter will trace the developments that ran parallel to and followed the *Diskurs grüne Gentechnik* up to the point of the decision on the new Genetic Engineering Act (GenTG) in parliament. As was seen, the “Agrarwende” and the new “consumer choice” discourse have had a substantial impact on the biotech debate in Germany. The *Diskurs* offered a platform for new themes, and new groups entered the debate on agro-biotechnology. This narrative will mainly focus on the developments in the years 2003 and early 2004, and in particular on coalition formation around coexistence and institutional and regulatory reforms. As the new political line of biotech regulation, to safeguard consumer choice and coexistence, had been tentatively agreed upon between stakeholders, this phase will show how the new policy line has been translated into institutional set ups and regulation. It will ask, how do new institutions and new regulation take account of these new issues? How does the new coexistence debate develop between the coalitions? What are the relationships between different accounts? Finally what does coexistence and new expertise mean for the developments in policy and the possibility of conflict solution? Again using Hajer and Sabatier the dynamics will be illuminated more analytically in the second part of the chapter.

#### **8.1 “Peasant wars” and “blocking policies”: new institutional features and coexistence regulation**

##### **8.1.1 The reorganization of the Competent Authority**

##### **From the Ministry of Health to the Ministry of Consumer Protection**

In national elections at the end of 2002, the ‘red-green’ coalition government was voted to a second term in office. The elections had an impact on the *Diskurs*, with the campaigning heating up the discussion climate (Hammerbacher 2002). If a change in government took



place, GM proponents hoped to regain some standing, because the conservative/liberal opposition was a declared supporter of agro-biotechnology (Agrar-Europe 2002). The re-election of the 'red-green' coalition was something of a surprise result; public opinion polls had suggested it would be otherwise. In fact, the margin of victory was very narrow. The coalition held on to power mainly due to the good electoral performance of the Green Party, with the effect of further increasing the leverage of the minor partner in the coalition. This in turn had a considerable impact on the agro-biotech orientation of the government. In the new coalition agreement of 2002, Green Party issue framings were almost entirely taken up (interview green parliamentary party, 06/03). Safeguarding the freedom to choose and "updating and transposing the new EU Directive from a consumer protection point of view" were the central demands in the agreement (SPD/B'90/Grüne 2002: 47).<sup>120</sup>

More importantly though, the re-election of the 'red-green' government created space for the reconsideration of regulatory competencies.<sup>121</sup> To recall, following the BSE crisis the Ministry of Consumer Protection (BMVEL) had been endowed with political responsibility for GM food. However, the major administrative player in the regulation of agro-biotechnology continued to be the Ministry of Health, which presided over the RKI, the Competent Authority. Shortly after reelection in October 2002, with a Chancellor's organization directive, this political responsibility for GM crops was shifted from the Ministry of Health (BMGS) to the Ministry of Consumer Protection, Agriculture and Food (BMVEL). This meant that the Künast Ministry was now endowed with the *full competence*, not only in matters of GM food but also in GM crop regulation, including the authority to write new legislation. The decision in favour of the BMVEL implied that the respective regulatory tasks of subordinate agencies involved in GM crop regulation had to

<sup>120</sup> In the new coalition agreement it is interesting to see how the issue is put. Under the section "Research, innovation and sustainability", biotechnology is still referred to as a 'key technology'. However, with respect to agro-biotechnology – subsumed under the section "Consumer policy, healthy food and modern agrarian policies" – there is no such rhetoric left (SPD/B'90/Grüne 2002). This stands in considerable contrast to the SPD Party programme from 2002, wherein biotechnology is embedded in "Standort" rhetoric. The programme states that, "the potentials in agro-biotechnology need to be researched. Together with industry, we will organize a carefully planned GM cultivation programme" (SPD 2002: 33).

<sup>121</sup> This has also provided space with regard to staffing policies. In 2003 Dan Leskin, former adviser on Genetic Engineering for the Greens/ EFA in the European Parliament, was taken on board of Minister Künast's team at the BMVEL. In early 2004 Beatrix Tappeser, a leading figure in the biotech critical expert scene became head of the biotech department at the BfN.

be adjusted accordingly. The Competent Authority was thus to be changed from the Robert-Koch Institute to the Federal Agency for Consumer Protection and Food Safety (BVL), a newly created subordinate agency of the BMVEL (Bundestag 2003).<sup>122</sup>

The decision to shift the overall authority in GM crop regulation away from the Ministry of Health and the RKI had been a long-standing demand of the critic community. Because of the predominantly environmental relevance of crop regulation - as was argued in the past - the Ministry of Environment would be more credibly entrusted with this role. However, the political shifts triggered by the BSE-crisis made a move to the Ministry of Consumer Protection more opportune (interview green parliamentary party, 06/03). Even though a Green Party member was now the head of the new ministry, GMO critical groups did not overly welcome this decision. There were fears that this move favoured the trend away from environmental questions in biotech regulation towards economic/agronomic considerations.<sup>123</sup>

### **From the UBA to the Nature Conservation Agency**

There was yet another decision concerning changes to the institutional set-up of regulatory competencies – a shift in environmental expertise from the UBA to the Nature Conservation Agency (BfN). With the BfN, a more outspokenly GMO critical institution was going to take part in approval decisions. This meant that GM crop approval for release and commercialization would henceforth be given by consultation with the newly created Federal Institute for Risk Assessment (BfR), BfN and RKI. Furthermore, the BBA and respective Länder agencies would now be asked for their opinions in the process (see Table 8). As already mentioned in earlier chapters, nature conservation related questions were getting ever more attention in the assessment of risks in biotechnology under the

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<sup>122</sup> In practical terms this means that parts of the former Center for Genetic Engineering of the RKI will be placed in this two new agencies. However, the RKI continues to play a role. With respect to the personnel, it looks as if the same people will basically take care of the approval procedure.

<sup>123</sup> The changes in the Competent Authority are critically perceived on both sides, albeit for different reasons. Common is the critique that too much power is allocated to the new agency and too few checks and balances are left to counterweight its decision-making power. The GMO critic's side fears that the kind of arrangement is too short-sightedly knitted in favour of the current political constellation and could hence fly back in their faces as soon as the government changes and the agriculture ministry falls back into more GMO-friendly hands. GMO proponents fear that there could be a "politicization of the approval procedure".

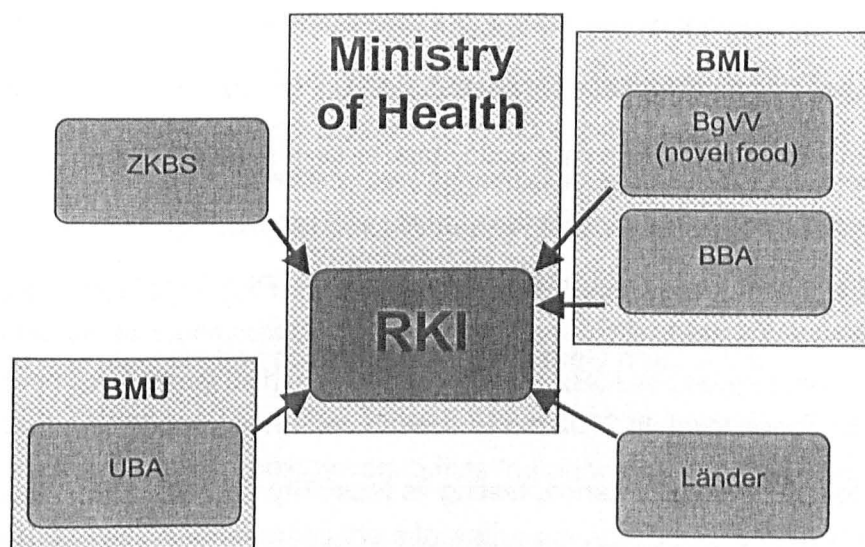
'red-green' government. The BMVEL explained the shift in environmental competence from the UBA to the BfN as being necessary due to the change in the nature of the subject. The assessment of environmental effects, stated the official justification for the bill, was better lying with an institution that focuses on living organisms and their interaction with nature, i.e. the BfN, than with the UBA, which focuses on harmful products (Bundestag 2003). Countering or complementing this official version is the following narrative. In the wake of institutional brokering between the Ministry of Environment and the Ministry of Consumer Protection on the question of the leading department, and with the decision in favour of the latter, the environmental Minister Trittin had decided to entrust the BfN with this role. According to insiders and as confirmed by press sources, in the environmental community the UBA had frequently been criticized for being "too liberal" (meaning too lenient) in its approach to GMOs (Deichmann 2002). As the BfN is considered to follow a different, more precautionary approach, with this decision the environmental side in risk assessment should be strengthened.<sup>124</sup>

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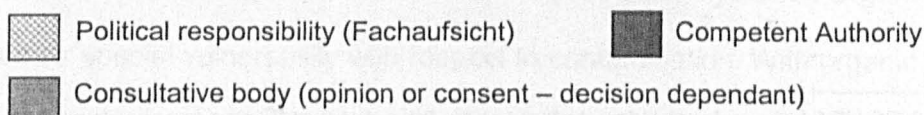
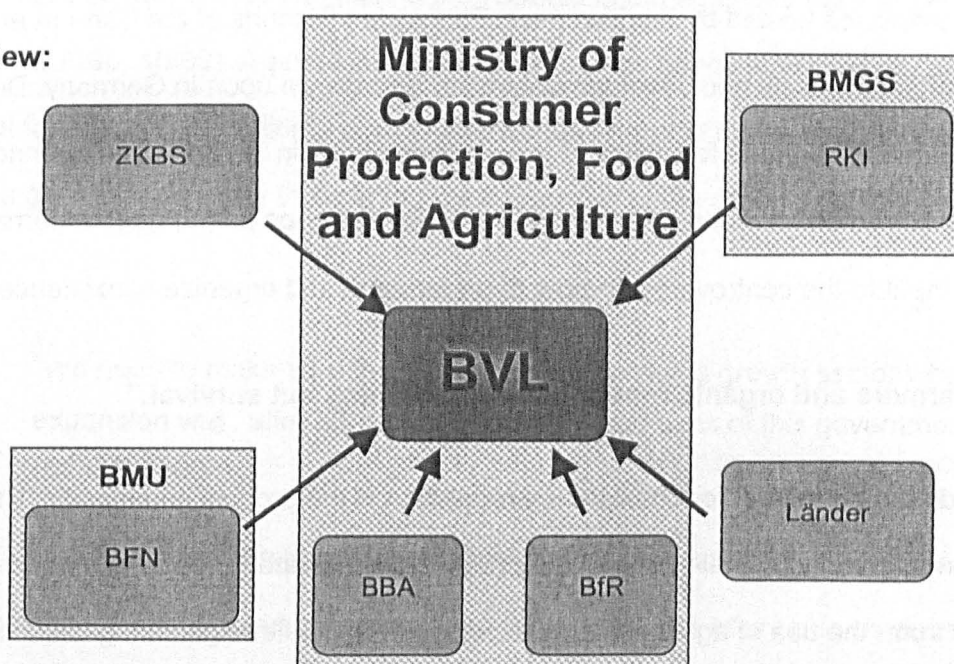
<sup>124</sup> However, against a superficial reading of competence enhancement on the environmental side of regulation there is concern that environmental aspects could be further sidelined. The BfN is perceived as being too critical in approach - its president, Hartmut Vogtman, has been known to support a total ban on GMOs - and the agency is not as well positioned in the reign of competent institutions in GM crop regulation as the UBA used to be. Furthermore, the BfN might lack a great deal of knowledge in matters of GMOs as a number of UBA officials will not move from Berlin to the Bonn agency. Overall from the environmental critic's side there is the concern that this move from the UBA to the BfN and the likely consequences of major quarrels between the agencies over specific decisions could have a negative impact on the quality and weight of the environmental risk assessment. As one commentator contended, this may even have a negative impact on the development of organic agriculture in Germany as Vogtman - a well established figure in organic farming - could be squeezed between the two fronts (interview ZsL, 06/03). (Vogtman held the first professorship in organic farming at Göttingen University, Germany.)

Table 8: Institutional innovations: The change in Competent Authority

Old:



New:



**BBA:** Federal Biological Research Center For Agriculture And Forestry

**BfN:** Federal Agency for Nature Conservation

**BfR:** Federal Institut for Risk assessment

**BgVV:** Food Safety Agency

**BMGS:** Ministry of Health

**BML:** Ministry of Agriculture

**BMU:** Ministry of Environment

**BVL:** Federal agency for Consumer Protection and Food Safety

**RKI:** Robert-Koch Institut, Center for Genetic Engineering

**UBA:** Federal Environmental Agency

**ZKBS:** Scientific Advisory Committee on Biological Safety

### 8.1.2 The coexistence debate – spanning environmental, health and economic risks

To guarantee consumer and producer choice was identified as one of the main common concerns in agro-biotechnology during the *Diskurs grüne Gentechnik* in Germany (BMVEL 2002). In the coalition agreement between the SPD Party and the Green Party these central demands were put forth as a policy task to be resolved in regulation in the upcoming governing term. In the meantime, a range of reports had been published by different institutions on the subject of coexistence, so for instance, from the UBA, the Öko-Institut or Friends of the Earth Germany.<sup>125</sup> Coexistence had also come to play a pivotal role at the European level. In 2002 the European Joint Research Center had released a report on scenarios for coexistence, testing its feasibility.<sup>126</sup> In 2003, contested views on the regulation of coexistence were put forward by the EU Commission (CEC 2003)<sup>127</sup> and an NGO conference hosted by the European Parliament (Friends of the Earth et al. 2003). These reports, proposals and developments were also drawn upon in Germany. Despite different judgements on the feasibility of “true coexistence”, in 2003 the subject had clearly come to dominate discussions and most of the societal groups had engaged themselves and given input to the controversy on how to understand and organize coexistence.

#### **Organic farmers and organic food industry: “Nothing but survival.”**

Spearheading the demand for coexistence regulation is the organic community. The organic farming and processing community (BÖLW) is principally opposed to, and by law prohibited from, the use of agricultural biotechnology. “Genetic engineering does not fit an

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<sup>125</sup>In December 2000 UBA held a stakeholder conference on the subject of “Green genetic engineering and organic farming”. During this conference, possible approaches towards protecting organic production were discussed between the different groups. These talks resulted in a report, which was prepared by the two Research Centers for Organic Farming in Berlin and Frick (CH) together with the Öko-Institut. This was released in February 2003 (UBA 2003). In December 2002 another report was released from the Öko-Institut “Gene flow: so what?” addressing the subject of gene flow and its likely economic and ecological consequences (Brauner 2002). In 2002 another report was produced by the Öko-Institut and the Center for Organic Farming in Berlin (Fib) on the issue of coexistence. The report was commissioned by Friends of the Earth Germany (BUND) (BUND 2002b). It focused on the question of contamination sources within the food chain and worked out different future scenarios on the basis of varying political and regulatory frameworks.

<sup>126</sup> Report available at: [www.jrc.cec.eu.int/GECrops/](http://www.jrc.cec.eu.int/GECrops/)

<sup>127</sup> According to the EU Commission, national authorities should specify rules and measures to deal with the subject. Farmers should also bear responsibility. The EU is involved only in coordination.

ecological agrarian and food culture" (Lünzer 2000), as has been stressed by the sector for years and a line of reasoning which can still be found in the sector's recent campaign:

"The success of organic farming is based on a holistic understanding of natural relationships. The whole is more than the sum of its parts! Biotechnology follows the principle of technological feasibility and considers all life forms as principally manipulative material. Possible consequences for eco-systems are hardly considered. Biotechnology put its focus on quick-fix solutions to problems and accepts unpredictable ecological risks and other possible costs. Organic farmers know that it is economical to work with the forces of nature" (BÖLW 2003: Flyer).

However, even though biotechnology contradicts the principles in organic farming and respective worldviews, "safeguarding the alternatives in agriculture and food production" is made more central in their campaigns than speaking out against a risky technology (interview FiBL, 10/03). Against the background of new agricultural policies, arguments are put forth that "the credibility of the Agrarwende" is put at stake when biotechnology is given a go-ahead, thereby threatening the expansion of the organic sector. To quote the BÖLW:

"We need to make sure that we protect a promising growth sector whose expansion was, after all, one of the proclaimed aims of this government" (BÖLW 2003a).

In this sense coexistence regulation is not only posed as a question of political credibility and economic rationality but of business survival as the fate of organic producers hinges upon a strict and working separation of the two production systems. Organic farmers stress their special vulnerability with respect to contamination. With organic farming and its products slowly gaining acceptance and their market share rising, it is argued that apart from individual material damage, which was certainly to be expected, "the real problem is that the *reputation* of the whole sector is put at stake" (interview FiBL, 10/03). Accordingly, in order to protect the organic sector from existential threats posed through GM cultivation, wide-ranging regulatory measures are asked for:

The organic sector demands protection against "contamination", whereby all the additional costs of separation should be borne by the introducer of GM crops. This is argued for on the basis of a strict application of the polluter-pays principle. In addition, the sector asks for strict regulation of good agricultural practices and clear regulation on liability (e.g. biotech industry fund), in case of damage. Furthermore organic farmers argue for a 0.1 % contamination threshold in seeds and a 'field-by-field' cultivation register (BÖLW 2003b). These rules, it is argued, needed to be introduced because current legislation did not provide enough protection and provoked conflicts between neighboring farmers. Since conflict prevention rather than compensation is prioritized, BÖLW demands regulation to be in place *before* the lifting of the moratorium.<sup>128</sup>

In putting forth these requests, organic farmers claim not to be speaking just for themselves but for the majority of consumers *and* conventional farmers, as, according to a poll conducted by Greenpeace in 2002, 70 percent of German farmers reject agricultural biotechnology (Greenpeace 2002). In arguing for coexistence and liability regulation the organic farming community thus stresses that they have a great deal in common with many conventional farmers. In pushing non-GM options in the market place BÖLW argues that:

"it is incomprehensible that Europeans embark on biotech production curtailing a global market advantage at a time when they could provide consumers worldwide with GM-free food" (BÖLW 2003a).

On the basis of such a common food quality strategy, in a sense of "class *in* mass"<sup>129</sup>, they suggest that GM-free spheres or even a GM-free Europe could be a common producer's interest.

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<sup>128</sup> Within the *Diskurs* no consensus could be found on this question. Farmers demanded that regulation needed to be in place before the lifting of the moratorium, while others held that regulation could be introduced gradually.

<sup>129</sup> This language was, for instance, put forth by a debate organized by the Foundation for Future Farming (ZsL): "Class in Mass – all organic or what?" Berlin, Grüner Salon der Volksbühne, 24.01.2003. To recall, the "Agrarwende" policy turn had been propagated on the basis of "class instead of mass". As this could be misunderstood in a sense of privileging organic farming or stigmatizing conventional farming it was increasingly stressed that the issue in new agricultural policies was to support "class *in* mass" production. Such a qualification of language also deemed necessary in light of the development of the organic sector as it moves towards larger scale production.

### **Conventional farmer's organizations: "Keep consumer's and farmer's trust."**

The National Farmers Organization (DBV)<sup>130</sup>, representing 90 percent of German farmers, does not want to rule out any type of farming. Hence there is no fundamental opposition to agricultural biotechnology, quite the contrary:

"Agro-biotechnology offers changes for the improvement of production techniques and products. These opportunities should not be overthrown by exaggerated discussions on risks. Scientists and researchers should be given the right to develop new knowledge and to put these to the test such as is the case with any other new technology...

Of course consumers and producers have the same right to freely decide whether they wish to use these products. In the case that the majority of the population rejects GMOs the agro-food industry will respect this decision and act accordingly" (Born 2002: 6).

Hence, the DBV has argued in the past for keeping all of its options open and has this way proven to be a reliable supporter of the biotech industry. However, against the background of the BSE scandal, damaging consumer boycotts and increasing uncertainty about the ever-shrinking prospects of GM crop use, the DBV has increasingly found itself caught in a dilemma. So Sonnleitner, the president of the DBV:

"Even though farmers know about the advantages of less herbicide and pesticide use, farmers fear that when using GMOs they could become once again victims of consumer boycotts" (Sonnleitner 2002).

These worries for farmers about negative consumer reactions have now, due to the gene flow and field contamination problématique, been supplemented by the threat of possible legal liability disputes with neighbouring producers.<sup>131</sup> The many conventional farmers who show a skeptical attitude towards GMOs are facing more and more pressures to use and tolerate agro-biotech products, if only because fodder and seed provision is

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<sup>130</sup> The DBV is a member of COPA, Committee of Agricultural Organizations of the EU, the main farming lobby organization at the European level.

<sup>131</sup> For instance, in a circular to the members of the regional DBV concerning agro-biotechnology it is argued that there is no reason to cultivate GM crops because of liability risks, the possible image loss with consumers and the lack of positive income prospects (Kreisbauernverband Tübingen/Zollernalb 2004: 7).



increasingly marked by GMO influx. In addition, the organic farmers, who form an increasing internal faction within the DBV as a consequence of the "Agrarwende", have stepped up pressure to get the farmer's organization to also represent their legitimate interests.<sup>132</sup> Altogether the DBV-represented farming community is very heterogeneous with respect to their acceptance of agro-biotechnology, more so than the organization is officially representing.<sup>133</sup>

Thus, being caught up between potential GM cultivators and non-cultivators, the DBV has recently become much more hesitant in speaking out in favour of GMOs. Instead the organization stresses consumer and producer choice and the prevention of unpredictable risks for farmers. In this sense the DBV identifies strict coexistence regulation as the key issue for guaranteeing choice and for providing a reliable legal framework for farmers. In accordance with the organic farmers, the DBV holds that a privatized conflict solution, as current neighborhood regulation in the German Civil Code suggests, pits farmers against farmers ("the war in the village") and is thus unacceptable.<sup>134</sup> The DBV insists on clear EU wide responsibility and liability regulation before the ending of the Moratorium. In this respect the DBV criticizes the EU commission's coexistence proposal and holds that "subsidiarity is wrong". In addition the DBV supports a lower than 0.9 % threshold in seed and the idea of voluntary GM-free areas (DBV 2003). In the case that approval of GMOs was to proceed without binding coexistence rules "the DBV would advise its members to abstain from cultivating GM crops", as the DBV stated in October 2003 (Kienle 2003).

The biggest, mainly conventional farmer's organization DBV has thus over time become one of the principle players in the demand for stricter regulation of GMOs. Even though

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<sup>132</sup> Even though the DBV represents many organic farmers, it stresses that "it is the farmer and not the specific production orientation that is put in the foreground" (interview DBV, 11/03). Yet the "Agrarwende" policies and the subsequent increase in organic farming - 50 per cent within the last three years - has not gone unnoticed in the farming sector. As a consequence the DBV seems now to have discovered its organic clientele. In 2003 the DBV held its first "Forum on Organic Farming" in the history of the association in which the biotech issue played a vital role (Sonnleitner 2003).

<sup>133</sup> Another family farming organization, the AbL, a kind of counter organization to the DBV, has also strongly spoken out against GMOs (AbL 2002).

<sup>134</sup> In contrast to organic farmers, the DBV rejects liability in case of compliance with cultivation rules. The DBV also supports a fund-based solution as it would allow liability claims to be quickly resolved. In doing so it is in favour of coexistence regulation similar to the Danish regulation (i.e. no liability in case of compliance, biotech fund financed by public/private sources (DBV 2004). This, however, is not going far enough for organic farmers.

the DBV underwrote a statement by a grand coalition of biotech supporters during the *Diskurs*, the so-called "Warenkette-Initiative", the DBV had recently become a difficult partner when it came to the initiatives of the biotech industry. For instance, whilst demanding coexistence regulation it supported the initiative on voluntary GMO-free zones. It argued, in a rather surprising alliance with the Nature Conservation Agency (BfN), in favour of large-scale field trials (agrar.de Aktuell 2003). Most importantly, though, in October 2003 the DBV cancelled its support of large-scale industry/Länder government-initiated field trials in Saxony-Anhalt because of the lack of coexistence and liability rules (DBV 2003a). Thus, even though the DBV continued to play a somewhat ambivalent role in the debate on agro-biotechnology it has over time become a supporter of a stricter regulatory policy course.<sup>135</sup>

### **Consumer organizations: "Pseudo-choice as solution to dilemma!"**

The rise in prominence of consumer issues after the BSE crisis opened up new opportunities for consumer groups in the political and administrative realm.<sup>136</sup> Along with a restructuring of the Ministry of Agriculture, numerous previously disparate consumer lobby groups within Germany were bundled into one organization, the Federal Consumer Association (vzvb). With a prominent president<sup>137</sup> and provided with considerable funding and personnel, this organization quickly became a critical political voice in Germany and more broadly involved in issues of food and agriculture.

With respect to GM food, the right of consumers to free choice has always been the key principle in consumer lobby work. In the past this meant being involved in questions on comprehensive labeling policies, transparency and public information provision. New agricultural policies and the focus on precautionary consumer choice and process quality

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<sup>135</sup> Critics argue that the DBV does not have a clear stance on the issue and they wonder which farming interests the DBV stands for: the GMO cultivators or the non-cultivators.

<sup>136</sup> In the year 2001 a new consumer watchdog organization called "Foodwatch" was founded by the former head of Greenpeace International, Thilo Bode. Even though this organization has so far not been very visible in GM crops and food issues, its rise clearly indicates a growing awareness of food safety issues and an increase in consumer advocacy work.

<sup>137</sup> Edda Müller, both former Länder Minister of Environment and former vice president of the UN Environmental Agency.

have widened the scope of issues and activities of consumer food policies beyond a mere focus on consumption and market activities (Müller 2001). Supporting the link between agricultural practices, environmental protection and consumer choice consumer organizations became part of a grand alliance of actors strongly supporting the "Agrarwende" (Gemeinsame Plattform 2001). This new consumer choice approach is reflected in the following statement to the *Diskurs*.

"As long as there are no clear answers with respect to opportunities and risks in agro-biotech it would not be in the interest of consumers to support measures which jeopardize or even render impossible alternative product markets and technological problem solutions. Fast track decisions 'justified' under the pressure of economic interests shall in no case jeopardize the proclaimed aims of the Agrarwende" (Verbraucherinitiative 2002).

For German consumer organizations one thing is clear, "the majority of consumers don't want GM food" (vzbv 2002). In addition, German consumer groups stress uncertainties in risk assessment and safety questions.

"There remains considerable scientific controversy about questions of risk assessment, safety, and reversibility. This needs to be assessed from a consumer protection point of view. These uncertainties with respect to risk potentials and consumer benefits do not allow the reduction of the question of agro-biotechnology to one of coexistence between different production systems. Moreover we need to do everything to guarantee safety and consumer choice" (Verbaucherinitiative 2002; similarly vzbv 2002).

"Food prices need to speak the economic, ecological and social truth" and consumers should be fully informed about this, states one of the principles of the Federal Consumer Organization (vzbv 2002a: 46). For guaranteeing safety and consumer choice, consumer organizations were thus pushing the discussion on questions of thresholds, costs and liability.<sup>138</sup> Regarding the coexistence line, which they accepted on the basis of low

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<sup>138</sup> Consumer organizations hold that the cost of controlling contamination and of separating flows of goods should be borne by those who introduce the technology.

thresholds as being the only realistic alternative, for consumer groups one of the most pressing problems to be solved was that of the necessary conditions and practical steps to be taken for a workable coexistence between different forms of agriculture. As opposed to environmental groups, who initially showed reluctance in even discussing the question of coexistence, for the consumer organisations and organic farmers coexistence meant at least "pseudo-choice", and as such was for them the best of the possible alternatives (interview vzbv, 06/02).<sup>139</sup>

### **Environmental NGOs: "Avoid creeping contamination!"**

There is no overall common approach within the environmental/anti-biotechnology NGO community as to how to handle the questions of GMOs in the future. In general, the NGOs still focus on a definite ban of GMOs and have thus for a long time been seemingly unwilling to start negotiations on thresholds, coexistence regulation or monitoring.

"Coexistence is impossible" was the line taken by NGOs at the *Diskurs* (Köchlin 2002).

Hence, for the NGOs the argument of consumer choice and coexistence did not really solve any of the fundamental opposition (Moldenhauer 2003). For them coexistence meant "contamination" and the concept of thresholds was seen as "the Trojan horse of the biotech industry" (ibid.: 251) and a "tranquilizer pill for consumers" (Nagy 2003: 3).<sup>140</sup>

However, facing the reality of GM cultivation, critical groups have recently engaged more in the debates.

"Coexistence may be impossible in many cases, but if we are to deal with GM cultivation in Europe then we need to tackle the problem of contamination", so one leading voice in the critic's camp (interview ZsL, 06/03). In this respect the EU Commission's proposal is absolutely unacceptable for these groups. Even though the environmental NGOs strongly

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<sup>139</sup>During the *Diskurs* there was disagreement on thresholds within the critic's camp: consumer NGOs and organic farmers were leaning towards higher thresholds out of fear that otherwise there would be practically nothing left labeled GMO-free. They urged the environmental NGOs to drop their reluctance and start negotiating about separation distances, costs and other practical steps to be taken to make coexistence and "pseudo-choice" possible (interview vzbv, 06/02). Officially, however, organic farmer's organizations support the "as low as possible line" with regards to thresholds. Organic farmers are thus caught in a dilemma. As a baseline they demand that "those who consciously reject the use of GMOs should be allowed to call their products GM-free" (Löwenstein 2003).

<sup>140</sup> However, Greenpeace almost euphorically celebrated the new labeling and traceability requirements from July 2003 as progress for consumers.

side with the organic farmers, they stress that the question of coexistence is not just an economic, but also an *environmental and ethical issue*. They argue that outcrossing or unwanted spread of reproductive material poses an environmental risk, as this spread would be irreversible. On the grounds of precaution, introgression of GM material, especially in seed, should be avoided, not just minimized. Strict coexistence rules are thus regarded as a basic precautionary measure, as they alone provide the necessary conditions that would allow a withdrawal in case of damage or to keep certain areas free from GMOs (Müller 2002). For these groups, coexistence is thus more than just a matter of technical measures and commercial interests, being additionally an "issue of long term guarantee of the freedom to choose what to consume and how to produce" (Haerlin 2003: 5). Given this opinion on the issue it is argued:

"In cases in which the choice not to use and consume GMOs would become practically impossible, the right to avoid GMOs must prevail over the right to use GMOs...[...] freedom of choice in this context is primarily a defensive right to avoid a certain technology for precautionary and ethical reasons. It should not be mistaken for a general entitlement to use whatever technology or its products" (ibid.: 2).

Facing the realities of a falling Moratorium, the NGOs run multiple strategies of damage prevention. One such strategy is to lobby for a ban of biotechnology on the basis of risk and uncertainty arguments. This includes public mobilization efforts and information provision of various kinds.<sup>141</sup> However, as a new line of argument the NGOs stress the "Agrarwende" and support the opportunities of a developing quality food market, within which a GM-free Europe could stand out, serving the niche markets in the world (Boschert/Gill 2003). The NGOs have thus taken up and further pushed the "Agrarwende" and quality food production rhetoric to keep transgenic material away from the fields and the markets, thereby strongly supporting organic producers. For instance, Greenpeace Germany has recently merged the issue of pesticide contamination with the issue of agro-

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<sup>141</sup> I.e. The Greenpeace-Shopping net initiative. In March 1996 Greenpeace Germany started the campaign "Greenpeace-Shopping net", a Greenpeace consumer service. In the context of this campaign, Greenpeace publishes - on the Internet, in booklets and in the media - information lists on retailer and producer's stance on GM sourcing and labeling policies. Greenpeace continuously updates this information and in 2003 commissioned another poll ([www.greenpeace.de](http://www.greenpeace.de)).

biotechnology under the motto: "Stop poison and biotechnology in our food".<sup>142</sup> Friends of the Earth Germany (BUND) has conducted a campaign on healthy food under the motto "For healthy food without biotechnology."<sup>143</sup> Even the nature conservation movement (NABU) has come on board by lobbying for sustainable farming practices and against biotechnology under the mottos "Tasty country-side!" and "Nature conservation with the shopping bag" (NABU 1998).

In more recent efforts aimed at protecting the right to stay GMO-free, NGOs lobby for stringent rules and community-based activities to protect non-GMO conventional and organic farming. They support the "Save our Seed" campaign<sup>144</sup> for seed purity and the establishment of GMO-free areas. For instance, in 2003 Friends of the Earth Germany (BUND) started the campaign "Fair neighbourhood"<sup>145</sup>, in which it provides legal information and support to local communities for the establishment of GMO-free areas and GMO-free feed supply.<sup>146</sup> In these activities the BUND is supported by the BfN. In the so-called "round table", an initiative supported by sixteen different groups consisting of the organic farming community and some conventional farming organizations (except DBV), including one Union, the consumer organization (vzbv) and various religious-based groups, environmental NGOs stage public events and write petitions to government in support of a restrictive transposition of the Genetic Engineering Act, including liability regulation and a "*Reinheitsgebot*" with seed (seed purity) (Offener Brief 2003).

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<sup>142</sup> This new framing has had some effect on the way the subject is internally handled. Greenpeace Germany restructured its biotechnology section as to more intensely focus on questions of food production and agriculture. At the website of Friends of the Earth Germany (BUND) the issue of agro-biotechnology is now wholly subsumed under the topic of "Agrarwende."

<sup>143</sup> [www.bund.net](http://www.bund.net)

<sup>144</sup> The "Save our Seed" campaign, led by the German Foundation on Future Farming (ZsL), lobbies for stringent seed purity legislation, that is, for contamination thresholds at the level of detectability. The campaign leader Benni Haerlin, both former activist of Greenpeace International and former member of the European Parliament for the Greens/EFA, has managed to gather 300 groups to support the initiative for seed purity as a precondition for coexistence. Haerlin has become something of a multiplier for NGO activities in the German anti-biotech scene.

<sup>145</sup> [www.faire-nachbarschaft.de](http://www.faire-nachbarschaft.de)

<sup>146</sup> In Germany increasingly broad-spectrum based local groups (i.e. including Attac, farmer's organizations, environmental, nature conservation, consumer, religious groups etc.) are forming up to push for GMO free areas.

## Biotech-industry : "What's the problem anyway?"

In the closing statement to the *Diskurs* industry stated the following,

"We are very happy that the majority of societal groups represented at the *Diskurs* want coexistence. That is, they support the existence of different agricultural production systems and ways of food production" (Prante 2002: 2).

Hence, for the biotech industry coexistence is first of all interpreted as a positive signal for an acceptance of agro-biotechnology. In moving the focus to cultivation, production chain and trade issues, the coexistence debate marks a move away from theoretical and fundamental discussions about risks towards more concrete questions of feasibility and practicability (ibid.). Industry considers coexistence as a mere economic issue and nothing new in the farming business. For them coexistence is a question of thresholds which need to be "plausible and workable". Thresholds as such do not have an environmental and health related relevancy, as released products have been tested in this respect. On the basis of thresholds "good exchange between neighboring farmers, combined with practical measures of good agricultural practices allow coexistence of different production systems" (Gent 2003).

Thus industry finds the discussion about coexistence highly overrated and mainly pushed by "ideological interests" as these, so the argument goes, were pursuing the issue of coexistence as a means of stopping farmers from growing GMOs. After all, "admixtures" (e.g. in case of herbicide residues) are a reality and accepted even in organic agriculture - up to a certain threshold. Accordingly, industry supports the EU coexistence proposal in terms of subsidiarity and responsibility: "The state should be rolled back, the concerned parties are able to organize themselves" (interview industry, 06/03). With respect to liability, industry does not accept being held liable in case of contamination and does not see why contamination as such constitutes a problem. With respect to organic or "without genetic engineering" -labeled products they argue that "those who hope to benefit [from special production, K.B.] should be paying for it" (interview industry, 06/03). In this

respect, it is argued that making 'unreasonable demands' would render food items more expensive, this way contradicting majority consumer interests.<sup>147</sup>

In efforts to "safeguard innovation", to "promote diversity" and in establishing a general framework and a reliable legal basis from "farm to fork" (Warenkette 2003), the seed industry is supported by members of the food chain, such as the food & feed industry, German wholesalers and oil-millers.<sup>148</sup> Against the public demand for safeguarding coexistence, industry is, nevertheless, showing efforts in contributing to the newly required knowledge base. In a common industry/Länder government cultivation programme planned in the Eastern German State of Saxony-Anhalt in the year 2003, biotech companies, including Bayer, Syngenta, Monsanto, BASF and farmers organizations were offering to address these questions on the feasibility of coexistence.<sup>149</sup> Yet in November 2003, when the joint agreement was due to be signed, of the original sixteen different programme supporters, only six companies had signed the agreement. The German Farmer's Organization (DBV) and other local farmer's organizations withdrew support because liability rules were still missing (Löhr 2003).

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<sup>147</sup> It is interesting to see how this it put in a questionnaire handed out to participants of the *Diskurs* by the Moderation team. Question: What do you think should in any case not be one of the results of the *Diskurs*? Response DIB/IVA: "Ignoring majority interests, as organic food is only bought by a minority of customers" (DIB/IVA 2002).

<sup>148</sup> The "Warenkette" is a common initiative supported by eleven organizations along the food chain. It involves the seed, food, feed industry, German wholesalers and import/export firms, German oil-miller's association, the National Farmer's Organization, and the Union of the chemical industry. This initiative was formed during the course of the *Diskurs*. Together they developed a common stance on the issue, published in (Warenkette 2002; Warenkette 2003 in German & English). In a press release of the "Warenkette", which is much less focused on innovation potentials but is instead stressing the necessity of reasonable coexistence regulation and consumer choice, the initiative is also supported by the retail sector, the Union for agriculture, construction and environment (IG-BAU) and the Union for the food and restaurant sector (NGG) (Warenkette 2002).

<sup>149</sup> In 1998 industry began to conceptualize cultivation programmes to gain experience in the field and to test the performance of the new crops. For instance Bayer (at this point Aventis), in cooperation with other companies, had started their own privately run cultivation programmes to monitor the performance and the cultivation practice of GM maize (Degenhardt et al. 2003). These programmes had been conducted with the use of special licensed seed contingents from the Federal Seed Agency (up to this point no transgenic seed had been given approval for cultivation in Germany) on several hundred hectares of farmland. Permission was given for the products to be used as animal feed. These programmes scarcely touched upon safety aspects but more importantly served the purpose of validating the company's performance enhancement claims. For example, in a publication issued by Monsanto, Pioneer and Syngenta on a four-year cultivation programme in Germany, the issue is solely the efficiency of Bt maize as compared to other pesticide methods and the subsequent profitability calculations for the farmers (ibid.).



## Food processors and retailers: "We should have it all."

In a policy statement issued during the *Diskurs* the grand coalition of members of the food supply chain declared that:

"consumer acceptance can be increased by ensuring freedom of choice and the coexistence of different agricultural practices" (Warenkette 2003: 8).

This goal to ensure "effective coexistence" (ibid.), however, can only be achieved on the basis of comprehensive and practical regulation. The food industry clearly wants the innovation potential of biotechnology to be realized (BVE 2002). For industry, coexistence means that consumers *and members of the supply chain* can be given the choice to buy or use genetically modified products. In this respect, the food industry rejects 'disproportionate' regulation, including process based labeling schemes.

A "Warenkette" press release from 2002, supported by the retail sector, stated that "coexistence is a dynamic process in which consumers and not interest groups decide over market shares" (Warenkette 2002). The retail sector thus supports the coexistence strategy, stressing that it offers a platform for every safe product. However the retail sector, another victim of the BSE crisis, is more cautious in terms of promoting such a consumer sensitive issue and argues neither in favour nor against GM products.<sup>150</sup> In contrast to other members of the supply chain the retail sector wants coexistence to be regulated on a European level, as different understandings and regulations of coexistence would not bring closure to the debate which they think is, however, pivotal for finally achieving consumer confidence (interview BVL, 10/03).

In the past the retail sector played a pivotal role as gatekeeper for GM food products. On the basis of anticipated consumer refusal the sector refrained from stocking GM labeled products on its shelves, at least in its own-label products. The pressure of the retail sector

<sup>150</sup> The BVL in a policy statement: "The BVL has always pursued the goal of providing consumers with free choice by clearly labeling products. Against the background of experiences with BSE and the loss of trust in the safety and quality of food the realization of this goal is ever more pressing" (BVL 2003). The retail sector has therefore not supported a "Warenkette" policy statement, which was more openly supportive of the technology (Warenkette 2003).

in turn induced the food industry, itself vulnerable to the "stigmatization" of their brands, to avoid the use of transgenic material. However, during the *Diskurs* other members of the supply chain, such as the wholesalers and oil-millers, stressed the increasingly difficult conditions for the use of GMO-free bulk raw products (BGA/VDOe 2002).

On the basis of this, in 2003 the retail sector produced a policy statement in which it urges consumers to take into consideration the fact that new labeling requirements, together with global sourcing of raw materials, would be likely to render it more costly and difficult, if not impossible, to avoid the use of transgenic raw materials and to find non-GM substitutes for use in their products (BVL 2003).<sup>151</sup> As a result, it could become increasingly likely that rather than try to substitute materials and keep products GMO free, they would just be put on the market labeled as GM.<sup>152</sup>

However, the process of strategy discussions and decision making within and between the various members of the food chain on how handle the issue is still ongoing (interviews BVL, 10/03; BLL, 10/03) and, at the time of investigation, no final conclusion had been reached. Agro-biotech seems to remain a 'hot potato' - irrespective of its advances in the food chain and increased efforts to portray it otherwise - and likely to be passed around or 'strategically defined' in the process of production and product marketing.<sup>153</sup> How these

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<sup>151</sup> One can also more frequently hear the argument that a negative public attitude towards GM products revealed by surveys may not actually translate into consumer boycotts of the specifically labeled product. A frequently cited example is the market situation of organic products, since these, although very highly valued by a majority of consumers, are rarely bought. Especially the German market has proven to be extremely cost sensitive, which leads to the suspicion that for the majority of customers it will be the price, and not the label that eventually determines purchasing decisions.

<sup>152</sup> This is, at least, what could also be concluded from the minutes of a meeting between the Metro Corporation (retailer) and some biotech companies. These internal minutes are available on the Greenpeace Shopping-Net website at [www.greenpeace.de](http://www.greenpeace.de) [28.08.2003].

<sup>153</sup> In this respect the case of Edeka Nord is illustrative of the conflict: In 2003 Edeka Nord (retail chain) started sourcing meat from animals that were fed with GM-free fodder only. Even though the GM policies are up to the companies themselves, the strategy was criticized for being "consumer deceptive" for the following reason. Edeka Nord had argued on the grounds of offering only "GM-free" meat. This wording, however, does not comply with the regulation on labeling (Lebensmittelzutatenverordnung) which allows only the wording of "without genetic engineering" (meaning produced by non-intentional use of genetic engineering). The argument was that Edeka Nord was unjustly playing on consumer worries using unlawful advertising slogans. With respect to product marketing, the German Federation of Food Law and Food Science (BLL), a pro biotech organization, recommends that its members refrain from giving written assurances about non-GM sourcing policies which they think cannot withstand market rationalities in the long run, i.e. with respect to the availability of GM-free feed. To "inform consumers truthfully" about GM material being used in their food and to give them a choice is thus considered as more helpful in building consumer trust in food products than providing potentially misleading information (interview BLL, 10/03).

tensions are being handled and how coexistence works in practice remain open questions to these actors.

### **Science associations: "Coexistence regulation as blocking policy"**

The most important science association in Germany, the German Research Society (DFG), is one of the most significant supporters of biotechnological applications. In 2001 the DFG published a new official statement regarding agro-biotechnology in which it recommended the

"...promotion of the responsible development of genetic engineering in plant breeding and food-related microbiology to the benefit of humans and the environment" (DFG 2001: 46).

In response to the "Agrarwende", the DFG highlighted that "gene technology is not incompatible with new agriculture policies, which focus increasingly on quality rather than on quantity" (ibid.: 45). The science organization has always considered itself as being *the* rational, objective voice in the German debate, and with this statement it continued to stress that, "the DFG would like to make an objective contribution to this discussion, which has often been extremely emotional in recent times" (ibid.: 44).

In this respect the *Diskurs* was criticized by the science organizations the DFG and DAF, the umbrella organization for the science associations in agricultural, forest, food and environmental research, for not being led by science-based facts, rather having been undermined by particular organized interests (DFG/DAF 2002).<sup>154</sup>

"In the scientific community we support the fact that consumers have a right to information and freedom of choice and that thresholds need to be based on scientific criteria. At the same time we hold that labeling does not have anything to do with ecological and health risks. We

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<sup>154</sup> NGOs have made the criticism that the science organizations do not consider themselves as stakeholders, rather they insist that they are objective, disinterested parties (Moldenhauer 2003a). The NGO representative states in a comment on the *Diskurs* that "it was particularly alienating that Prof. Buhk from the Robert-Koch Institut, the Competent Authority, spoke as a representative of the DAF demanding an extension of field research" (ibid.: 252).

scientists clearly deplore the fact that the *Diskurs* has not been able to convey this message" (ibid.: 3).

In fact, with the coexistence debate it has been argued by these and other like-minded scientists that the discussion on GMOs has become even 'more ideological' in nature, and that with the new planned regulation on coexistence the government was implementing a "blocking policy" (agrar.de aktuell 2003a).

In the past, and continuing to date, the science organizations have been professionally organized, for instance in the "Wissenschaftskreis grüne Gentechnik" and other expert panels or commonly staged symposiums. They are well integrated in the networks of associations and individuals that support biotechnology, as for instance in the "Gesprächskreis Grüne Gentechnik" a confidential pro-GMO public-private and business-science expert circle. Yet this line of reasoning concerning coexistence mentioned above is not shared by the Association of German Scientists (VDW), which, together with the Öko-Institut, supports a strict coexistence policy. They demand strict regulation, including liability and the level of detectability in seed thresholds. In great contrast to the above mentioned science organizations, the VDW-scientists declare that their demands are justified by science *and* societal considerations (agrar.de aktuell 2003b).

### **BMVEL: Safeguarding choice and preventing the "war in the villages"**

As was shown in Chapter six, with the new Künast line the GM controversy has been embedded in a more fundamental discussion on food production and a restructuring of farming. Künast made it no secret that GM crop cultivation did not fit into her scenario of more sustainable forms of future food production (Künast 2002). Seen from this perspective the demand for coexistence means something more fundamental, beyond the direct impact on consumers and farmers and their economic interests. In that vein, the questions regarding the regulation of biotechnology in agriculture and food imply matters beyond health and the environment also affecting social and ethical concerns. However, as the minister declared, thresholds alone would not guarantee this freedom of choice as

long as organic, non-GMO conventional farmers and others affected by the introduction of GMOs into the food chain were not protected. That is why Künast demands strict coexistence rules. She contends that the introduction of provisions on coexistence is required since this is the only way to “prevent war in the villages” and to achieve a ‘peaceful balance’ between the interests of non-GMO and GMO cultivators and their clients (Berliner Zeitung 2004). Hereby the BMVEL considers that the coalition agreement and the EU Directive 2001/18 could be used as a statutory basis for such measures. In the latter, Art. 26a (new) states that member states can specify protective measures in order to avoid adventitious presence of GMOs in non-GM products.

“Coexistence is not primarily a matter of safety considerations but there are connections to the safety question, e.g. with respect to monitoring and traceability. Coexistence allows an individual safety decision according to individual preferences. That’s the basic principle” (interview BMVEL, 06/03).

The Ministry is thus not primarily concerned about possible environmental safety aspects with respect to coexistence regulation. Interestingly enough though, nature protection is also framed as a coexistence issue in terms of safeguarding not only GM-free agricultural and food choices but also “GM-free nature”, in particular with regard to protected areas (interview BMVEL, 06/03).

With this policy line, Künast is receiving a lot of support from the organic and environmental community, as they claim that current regulation does not sufficiently take into account the changing realities and altered background conditions concerning quality food production and sustainable agriculture. As is argued in the UBA coexistence report,

“The European lawmaker has recognized the growing significance for the consumer of foods produced through organic farming and is giving organic farming a role in the reorientation of the joint agricultural policy. [...], the European lawmaker must find a way to settle the conflict of interest and keep the peace between the different forms of agriculture (UBA 2003: 35, 36).

Current GMO regulation would thus contradict these aspirations. The report therefore suggests that the necessary protective measures for this non-GMO sector could be based on a “well founded protective and precautionary concept by the member state” (ibid.: 40).

**BMVEL thesis paper on coexistence of conventional and organic agriculture from 09.05.2003**

After month of discussion on the subject, in May 2003 the Ministry of Consumer Protection had finally put forward the following proposed principles for GMO handling:

- Polluter-pays principle
- Coexistence requires specific measures to be put in place throughout the food chain
- Coexistence requires thresholds (seed: *as low as possible*)
- Even though specific measures need to be put in place *throughout* the food chain, most important will be to safeguard seed and agricultural production
- To guarantee effective property protection of GMO-free cultures and to secure a “peaceful coexistence” of different production systems, a minimum of *public regulation* is needed. i.e. conditions at deliberate release, definition of *good production practices* in the handling of GMOs, general requirements with respect to qualification of farmers and information dispersal (maybe alongside voluntary agreements)
- *Liability* for GMO producer and cultivator
- Obligation to register GMO application in a *public register* (cultivation objective and production site)
- Establishment of *GM-free zones*
- Civil laws in case of property infringement on non-GMO products

In this proposal (BMVEL 2003) it is stated that national measures are necessary, but for purposes of market harmonization a *European regulatory framework* is needed. The Künast Ministry criticizes the EU Commission’s advance in coexistence and instead formulates a clear demand for European and national regulation beyond voluntary agreements. In conceptualizing its coexistence strategy, the BMVEL has used a great

deal of expertise from the Öko-Institut<sup>155</sup> and the organic community. However, the Ministry stresses that it does not speak only for the organic community, but for the majority of farmers and consumers. Coexistence provisions are considered as so pivotal to safeguarding choice and keeping peace between farmers that the BMVEL calls for a "duty to precautionary practices" ("Vorsorgepflicht") in order to strengthen damage prevention (Wollersheim 2003).

### **8.1.3 Transposition of EU Directive 2001/18 into national law: the way to the new Genetic Engineering Act (GenTG)**

In July 2003 the EU Commission launched a lawsuit against the German and ten other European governments for not having transposed the new legislation on release of GMOs, Directive 2001/18, into national law. Yet already in 2002 a new version of the Genetic Engineering Act (GenTG) had been drafted by the BMGS but eventually fell victim to the new political constellation and subsequent changes in competence.<sup>156</sup> This process of shifting of competence took up a great deal of time and political mediation at the highest level. In the meantime the process of drafting had been stopped and then taken up under a new political leadership and with new and different political priorities.

In Spring 2003, a draft version newly worked out under the BMVEL was given green light from Minister Künast and was circulated between the different ministries and administrative federal and Länder bodies involved in GMO regulation. The draft law was written in 'the new spirit' in terms of strengthening safety regulation and introducing a coexistence and liability regime. Even though the minister declared that the bill would pass in the year 2003, the process of commenting and first internal tuning already took much longer than expected. In the meantime stakeholders had organized themselves and ran multiple conferences, activities and events on the subject.<sup>157</sup> To name just a few,

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<sup>155</sup> In fact, according to insiders, Künast was to a great extent taking on external forms of expertise mainly due to a lack of cooperation within her own ministry.

<sup>156</sup> For the development of the legislative process, see: [http://keine-gentechnik.de/politik/countdown/countdown\\_10.html](http://keine-gentechnik.de/politik/countdown/countdown_10.html). [10.01.05].

<sup>157</sup> For instance, in April 2004 there was the biggest ever anti agro-biotech demonstration in the city of Stuttgart with over 10.000 participants.

GMO advocates initiated parliamentary hearings in the state of Saxony-Anhalt and the Bundestag to push the 'red-green' government toward a "quick and reasonable transposition" of the GenTG. GMO proponents supported the "Save our Seed" campaigns, 'round table' initiatives and regional activities in support of GM-free (meaning cultivation free) zones<sup>158</sup> and strict regulation. In November 2003 the first voluntary GM-free cultivation zone was established in the state of Mecklenburg-Vorpommern, based on a common initiative of organic and conventional farmers. Many more such initiatives were soon to follow. A public/private cultivation programme, similar to the one mentioned before, was finally started in May 2004 against strong and continuous protest.<sup>159</sup> In the community the topic was highest on the agenda and it was argued on all fronts that whatever happened now, would "seal the fate of agro-biotech in Germany".

One of the bigger hurdles for the draft was overcoming the internal split between the coalition partners and the administration themselves. Giving proof of the ongoing struggles, 2003 is marked by contradictory developments. For instance, in May 2003 the RKI (BVL) approved a GM maize variant from Monsanto, based on a controversial risk assessment rationale, indicating that regulatory practice seemed to be continuing largely as before.<sup>160</sup> In contrast to this, in October 2003 a GM apple field trial was stopped by an intervention of the BMVEL with green parliamentary members justifying the move on the grounds that "the development of alternative measures was more promising (Hermanau/Hettlich 2003). Likewise the strong precautionary nature of the bill triggered major arguments between the coalition partners. In particular the social democratic-led Ministry of Economics (BMWi) and the Ministry of Education and Science (BMBF),

<sup>158</sup> There is an important differentiation between GMO-free zones and GMO-free *cultivation* zones. As a GMO-free zone suggests an entirely GMO-free area, and since this is difficult to guarantee both organic and conventional farmers refer to GMO-free cultivation zones. For instance in the "GMO-free cultivation zone Neckar-Alb", a region in the state of Baden-Württemberg, animal feed containing GMOs can still be fed. Organic farmers are even running advertisements with signs on their fields saying "GMO-free cultivation". They say there is no 100% guarantee to avoid GMO invasion in the fields and in seeds.

<sup>159</sup> In a so-called public/private biotechnology offensive, the States of Saxony-Anhalt, Bavaria and Mecklenburg-Vorpommern together with private companies started GM crop trials in 29 different locations totaling approximately 300 ha of land. In order to get farmers on board, the State of Saxony-Anhalt put up a compensation fund of 240.000 EUR to be paid in case of economic damage. The trials came under attack because, among other reasons, locations were not disclosed, neither to the public nor neighboring farmers.

<sup>160</sup> Assessment concerns maize MON863 and hybrid MON863xMON810. The risk assessment from 06.05.2003 is available on the website of the EU Joint Research Center. It was controversial, for instance, because the crop contained anti-biotic resistance marker genes. In the respective committee vote in Brussels, Germany, for the first time in a vote on GMO issues, abstained.



bastions of “Standort” based rhetoric, issued strong objections to the ministerial draft, which they claimed was too restrictive.<sup>161</sup> Accordingly in the process of finding a compromise, some features of the original draft version were changed. Finally in January 2004, the ‘red-green’ government presented a common Cabinet proposal to the public. In May 2004 the draft proposal had its first reading in parliament.

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<sup>161</sup> For instance, the Minister of Economics has been quoted as saying that by protecting GMO-free production his colleague Künast would “kill a future technology” (quoted in Moldenhauer 2003).

### **Box 3: The key provisions of the GenTG as of May 5, 2004 (Bundestag 2004)**

#### **Coexistence as protection goal**

The GenTG proposal was written against the background of the consumer protection and coexistence problématique. The new law aims at ensuring GM-free production and the coexistence of GM crops and non GM-crops. This priority is highlighted by the fact that coexistence is added to the protection goals of the law in Paragraph One.<sup>162</sup> This provision means that considerations other than scientific are added to the bill. However, the original draft proposal of the BMVEL was more outspoken on the issue. The respective compromise section reads as follows: The aim of the law is “to provide the opportunity to produce food and feed with conventional and organic, as well as biotechnological forms of production”.

#### **The concept of economic damage**

Up to this point economic damage has been acknowledged neither in the law itself nor in judicial decisions. The new law proposal aims to protect non-GMO forms of land cultivation and hence introduces liability for economic damage. According to the polluter-pays principle, GMO introgression, if resulting in damage, can trigger liability claims as specified in § 906 Civil Code neighborhood law. The law obliges GMO operators to take precautionary action by calling upon a “duty to precautionary practices” in order to prevent an “essential reduction of value” being inflicted on non-GMO crops. These precautionary practices are to be made concrete in the form of “Good Agricultural Practices” (i.e. safety margins, pollen barriers etc.) to be specified in administrative rules. An “essential reduction of value” occurs when products cannot be placed on the market because of cross contamination. Most controversially, planters of GM crops are held liable for economic damages to adjacent non-GM fields even if they followed planting instructions and other regulations. For easing proof of damage the new law establishes the principle of “joint and several liability” of all neighboring farmers which might have caused the cross contamination, so that the affected farmer can decide from whom to claim compensation.

#### **Publicly accessible cultivation register**

In order to provide cultivation information to all participating parties, a cultivation register is to be introduced where field trials, cultivation sites and other specific data are listed. This was yet another point hotly debated between the coalition partners. The draft law of the

<sup>162</sup> Originally the goal of biotech promotion had been taken out in the BMVEL draft version, stressing the exclusively protective character of the bill. Keeping the goal of biotech promotion in the law was, however, strongly supported by biotech advocates in the government and hence reintroduced.

BMVEL foresaw full registration (exact locations of fields) and a publicly accessible register. Now only parties with a “justified interest” can have access.

### **The Precautionary Principle (PP)**

The new law explicitly states the recourse to the Precautionary Principle in the aim of the law and in several passages, yet newly extended to include practices in coexistence. In the original BMVEL draft version, a reference to the PP was included in the part on risk assessment in order to stretch the scope of interpretation. This reference was omitted in the final version. However, the draft requires a minimization of outcrossing as a condition for field trial approval.

### **Protection of “ecologically sensitive” areas**

Nature conservation concerns were explicitly added to the new law. For the sake of protecting “ecologically sensitive” areas, GM cultivation areas need to be registered at the local nature conservation office. However, cultivation can only be denied in cases of “considerable damage”.

### **Competent Authority**

The draft proposal reconfirms the change in competence – the shift of political responsibility for GM crops from the Ministry of Health (BMGS) to the Ministry of Consumer protection, Agriculture and Food (BMVEL) and the subsequent shift from the RKI to the BVL, as well as the shift from the UBA to the BfN. Whether the BfN was to have effective veto power in approval decisions was highly controversial.

### **New composition of scientific advisory body (ZKBS)**

The proposed law suggests changes to the composition of the scientific advising committee ZKBS. This way it has taken on board a long-standing critique on the committee’s composition in light of questions concerning environmental release. The law suggests splitting the committee in health and environmental related issues and changing the composition of the committee members such as to include additional expertise in the area of farming, consumer protection and nature conservation.

When introducing the Cabinet proposal to the public in January 2004, Künast declared that a compromise was found which was “in the spirit of the BMVEL” and that the law “was a great success for consumers and for farmers” (quoted in Gaserow 2004).<sup>163</sup> For consumer and environmental organizations and the organic farmers the law pointed in the right direction but was still not satisfactory as it left many questions, for example in the case of liability, un-addressed (Offener Brief 2004).<sup>164</sup> Biotech proponents spoke of a “biotech prevention law” as the bill was found to be too restrictive, introducing “bureaucratization”, posing obstacles to cultivation and stifling innovation (for example, DIB 2004).

Since Länder competencies were bound to be involved in implementation, the bill needed to pass in the upper house (Bundesrat) as well. Already in April the opposition-dominated second legislative chamber issued a statement in which it suggested almost one hundred changes to the government proposal, mainly, however, in the area of coexistence and liability regulation (Bundesrat 2004).<sup>165</sup> Yet the ‘red-green’ government and its respective majority in parliament did not signal its readiness to make any major concessions. In order to avoid lengthy conciliation procedures between the two legislative chambers and a watering down of what it considered to be ‘central features of the new biotech legislation’ the ‘red-green’ government changed the proposal such that it no longer needed consent in the second law-making chamber.<sup>166</sup> Accordingly, the law was passed with strong backing of the Greens and the SPD Party in June 2004. It should be noted that the

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<sup>163</sup> To underscore the importance of regulation for consumer choice, alongside the GenTG proposal the Schröder Cabinet approved a draft proposal introducing strong sanctions – including fines up to 50.000 EUR - in case of non-compliance with new labeling laws as required by the EU legislation on food and feed stuff (agrar.de Aktuell 2004). This provision was, however, voted down by the Bundesrat (upper house) in April 2004.

<sup>164</sup> However, it needs to be said that Künast’s law proposal was interpreted by many as an unnecessary “pressing ahead” in terms of clearing the way for new approvals (she was criticized, amongst others, by the Green/EFA group of the European Parliament). In fact, Künast had always stressed the urgency of devising regulation to protect GMO-free agriculture in light of the lifting of the EU wide Moratorium.

<sup>165</sup> For instance, a farmer should only be held liable when violating good agricultural practices. The principle of joint and several liability should be dropped and instead replaced by an public/private financed fund. The Bundesrat does not consider it to be necessary to formulate good agricultural practices (product information labels on seed packages would be sufficient) or to require special competence in the handling of GMOs (Bundesrat 2004). Some of these proposed amendments were supported by social democratic Länder governments.

<sup>166</sup> The law still has to go to the Bundesrat, however, it could only overrule the law adopted by the Bundestag with a two-thirds majority. Since this seems unlikely, according to insiders, the Bundesrat can no longer prevent legislation, but only slow down the procedure. However, GMO proponents also question whether legislation complies with EU law and the German Constitution.

proposed coexistence legislation from June 2004 was even strengthened in some aspects by the parliamentary majority, for instance, liability claims could now be triggered by adventitious presence below 0.9%, giving in to central demands of organic farmers (Bundestag 2004).<sup>167</sup> In this decisive session of the Bundestag, Herta Däubler-Gmelin<sup>168</sup>, a member of the SPD Party and chairperson of the Parliamentary Committee on Consumer Protection, stated the following,

“As the European Directive stipulates, there should be a possibility to use GM crops and seed in agricultural production. However, our bill formulates strict rules for such usage. We think these rules are necessary because they guarantee and safeguard opportunities for those who do not want to use GMOs, and especially they protect organic farming. They are furthermore necessary because consumers, the great majority of whom reject GMOs, can continue to buy the products of our farmers. In the interest of these farmers and consumers we do not want GM foods to get on our shelves in a creeping and uncontrolled fashion. We not only want risks to be much more thoroughly assessed, but we want transparency, guarantees, truthfulness and clarity” (Däubler-Gmelin 2004: 2).

## 8.2 Explaining institutional and legislative change

In this final narrative it was shown how the new debates developed and how they were having more significant effects, as in the reorganization of the Competent Authority, in stakeholder balance and in legislation. The last analytical section will examine the narrative using Hajer and Sabatier's approaches. In particular, this section will test the role

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<sup>167</sup> Further amendments: Reporting duties for GM cultivators were increased. The amendment concerned changes to national nature protection law as providing a basis for refusal of cultivation in regionally specific sensitive areas. The law also gives the possibility to refuse and/or withdraw approval in case that coexistence is not possible. With respect to liability, in case of damage despite compliance with good agricultural practices, the German Parliament suggested that farmers should take the matter of liability up with their seed providers (only weeks later the German insurance association declared that the cultivation risk was not insurable (agrar.de Aktuell 2004). As another major change, the BfN's role in approval procedures was loosened so that only its opinion and not its consent was required.

<sup>168</sup> There is an interesting connection between GM policies in Germany and the Iraq war. Däubler-Gmelin, German Minister of Justice at the time of the US Iraq invasion in 2003, made a supposed comparison between Bush's Iraq policy and Hitler's foreign policies in the 1930s leading to her removal from office. She then became the chairperson of the Bundestag Parliamentary Committee on Consumer Protection, that is, in a leading brokering position between the parliamentary fractions. Ms Gmelin is a passionate, professional, very credible social democratic politician and was strongly supportive of the BMVEL policy approach. However, she was arguing more on the line of “transparency, guarantees, truthfulness and clarity”.

of beliefs and discourse in coalition formation around coexistence and look at the quality of policy change.

### **8.2.1 Discourse and story-lines as in Hajer**

Hajer introduces two concepts that allow us to judge when discourses become hegemonic and mark policy change. This is the case when a) the conditions of discourse structuration exist: "if the credibility of actors in a given domain requires them to draw on ideas, concepts, and categories of a given discourse" (Hajer 1995: 60). And b) discourse institutionalization is reached "when a given discourse is translated into institutional arrangements" (ibid.: 61).

#### **Coexistence - the conditions of "discourse structuration" and its effects**

In 2003 the coexistence issue became top of the biotech agenda throughout the German scene. As everybody talked about choice and coexistence, one could say that in the phase described above an actor's political credibility depended upon the usage of these terms. In fact, one could argue that coexistence needed to be considered for gaining public legitimacy, indicating that a condition of "discourse structuration" existed. However, we can also see that coexistence meant different things to different people and groups. While for biotech critical discourse coalitions coexistence meant "the safeguarding of non-GM alternative spaces and products", for the pro-GM discourse coalition coexistence meant "promoting diversity" in agricultural production and consumer choice, that is, coexistence meant the final breakthrough of agro-biotechnology. Both discourse coalitions thus related very different social, political and ecological imaginaries to the concept and, as a result, drew different conclusions for future measures.

#### **Coexistence: how new story-lines affect the balance between coalitions**

Coexistence brought about changes in the composition of discourse coalitions. In contrast to the 1990s when arguments of the "Standort" and "innovation" were paramount, the pro-GMO communication changed. A stress on global "economic and food chain rationalities"

and “diversity” and free consumer choice, in combination with the demand for “reliable legal frameworks and planning security” brought together a great coalition of food chain actors to officially support a pro-GM policy line in the “Warenkette” initiative. This way the discourse coalition of the proponents was broadened, and, depending on what the emphasis was laid upon, be it “innovation/Standort” or “consumer choice”, even the retail sector and some of the Unions (the NGG formerly belonging to the GMO critical camp) were joining in the discourse coalition of the GMO proponents.

However, even though biotech proponents brought together a great coalition of actors in the “Warenkette” initiative, the coexistence issue put the GMO critical discourse coalition on the argumentative and political offensive, for the following reason: Coexistence means a shift in key terms, key practices and key actors. While the old biotech debate evolved primarily around environmental and health risks, the new coexistence debate is focused on more practical aspects of cultivation and separation of different production chains. Coexistence thus highlights different risks involved in biotech production than the ones that stood at the center of official attention before. Even though coexistence leads the focus away from environmental issues, the debate holds true for some of the story-lines that biotech critics had thrown into the debate for years, namely the risk potentials in outcrossing. The coexistence debate does not verify that outcrossing per se means damage, but it certainly consolidates that outcrossing and contamination are highly problematic in a political environment which is so divided on agro-biotech issues and moreover committed to new agricultural policies. This new prospect of possible *economic* damage was real. At this point a simple denial of this fact ceased to be an option.

### **The “war in the village”: creating new bonds between actors**

More importantly, as a DCF analysis illustrates, as the issue of agro-biotechnology finally “made it to the field” turning into a question of agricultural practices and local farming conditions, *farmers* have become increasingly involved in the policy discourse. Against the background of the “Agrarwende”, the politically strengthened organic community had a strong case for demanding strict regulation, indeed, at the beginning of the story, the issue

was all about safeguarding organic farming. Yet the story-lines of “economic damage”, “consumer boycotts” and finally the specter of a looming “war in the villages” suggested that coexistence was not just an issue for consumers or a minority of organic farmers, but that the legal and market insecurities of GM crops posed a potential economic risk to the *whole* farming business. In the farming community it is argued that farmers simply cannot afford to disregard consumer choice and to live in a constant state of mutual suspicion and legal quarrels with their neighbours. “Farmers should not be made to carry the risk of agro-biotech!” these sorts of story-lines thus create a common bond between conventional and organic farmers, working against an organic/conventional farming divide. As a consequence, many conventional farmers have joined the discursive alliance of GM critical groups, including the DBV, although it remains committed to ambiguity on the subject. Together these forces build up a credible front against the “no problem” coexistence line of biotech proponents.

### **Coexistence as “safeguarding alternatives”: a powerful referential frame**

With “safeguarding alternatives in agriculture”, the coexistence debate provided critical groups with new and hitherto neglected but highly plausible, *political* arguments of why GM technology, in the case that it was introduced, would have to be highly regulated and contained. In putting stress on the loss of choice for consumers and *all* farmers and in offering a positive scenario of quality food production, biotech critics have finally found a common powerful referential frame for their lobbying and other anti-biotech activities. Gaining external support *also on the basis of economic interests*, the discourse on free consumer choice and coexistence thus changed and strengthened the basis of the GM critical discourse coalition. The protest coalition, which used to be sustained mainly by environmental groups, was now strongly supported by consumer groups, nature conservationists, religious groups, local groups/initiatives and most of all farmers, altogether rendering protest more powerful, “tangible” and literally “down to earth”. Bringing protest back to the communities, a sense of place - local eco-systems, local farming conditions (small-scale, small-patch) and local identities - are thus used to counter



the technocratic logic of free trade and technology intrusion.<sup>169</sup> However, it should not be forgotten that GMO critical stakeholder input has gained momentum in legislative and community activities because it was supported at the highest political level. In this way the new discourse backed up the change in power relations between the protagonists and the opponents of GMOs. Given this political clout the BMVEL could, in turn, count on and point towards considerable public support for its new biotech strategy.

### **Coexistence, expertise and possibilities of conflict solutions**

As mentioned earlier, through the new debates the concept of risks and expertise in agro-biotechnology was extended and new knowledge (on organic farming, nature conservation, crop separation, insurance schemes) found its way into biotech expert/stakeholder debates. In Germany this has found its expression in institutional redesigns to include new knowledge in expert procedures, such as the broadening of the scientific expert committee (ZKBS) or the installation of the BFN in crop approval. The question of coexistence further expands the range of possible socio-political concerns to be included in biotech deliberations. As shown in the narrative, biotech proponents, most of all those in the sciences, denounced this trend, calling it "ideological" or "unscientific", while others welcomed it as an opportunity to finally lay open the political and cultural choices inherent in technology regulation. Without a doubt, this discursive expansion further complicates the issue, as decisions need to take account of more divergent views and ask for even more scientific advice, for instance on questions of pollen flow or contamination pathways ("scientization").<sup>170</sup> However, Hajer points to the opportunities of such arrangements when different discourses and concerns can be related to one another and those contested questions become part of the *formal* policy-making structure. More expertise can thus mean greater scope for mediation between socio-political and techno-scientific interests and so contribute to solutions more acceptable for all.

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<sup>169</sup> Although groups such as Attac are involved in biotech protest activities the anti-globalization rhetoric has not really picked up in the German debate. This may be the case because it is not supported by other important groups, such as the organic farmers. The localism German farmers adhere too is also less inspired by a romantic notion of locally specific rural life but rather concerns local patterns and conditions of farming and marketing. In contrast, for instance, to France (Heller 2002).

<sup>170</sup> For the concepts of "scientization" and "politicization" see (Weingart 1999).

## **The BMVEL, BfN and the new GenTG – the conditions of “discourse institutionalisation”**

For Hajer discourse institutionalization is reached once a given discourse is translated into institutional arrangements, e.g. if the practical implications of contamination are translated into concrete policies (liability, good agricultural practices etc.). As shown in the narrative the institutional changes that took place in the year 2003/2004 give a strong indication of the consolidation of the new policy discourse. With the shift from the Ministry of Health to the Ministry of Consumer Protection, agro-biotechnology became wholly subsumed under consumer and agricultural policies. With the change from the UBA to the BfN, nature conservation and biodiversity related issues came to the foreground in biotech regulation. Finally, with new legislation focused on coexistence and liability regulation, the policy of free consumer choice and alternatives has received a relatively strong institutional base. Existing political institutions have thus internalized long-standing demands for incorporating new expertise (e.g. the change in composition of the ZKBS), and to deal with the new issues (liability). At this point in time (July 2004) one can safely say that the discourse of “Agrarwende” and “consumer choice” left its clear mark on the actual process of biotech regulation.

### **8.2.2 Belief systems and change in the ACF**

How can one judge the developments in this phase from an ACF point of view? What is the role of beliefs in the framing of coexistence, could coalition building be explained on the basis of beliefs? On what basis can policy change be explained, external factors or belief system change (including learning)?

#### **The multiple frames of coexistence and the role of beliefs**

To recall, in the ACF actors perceive the world through different lenses consisting of their preexisting beliefs. This idea may again help in understanding the multiple frames of coexistence in the narrative. Previously, in Chapter four, two different belief systems of

advocacy coalitions were identified and qualitatively different risk frames were linked to these coalitions. It was argued that there is considerable evidence that it is beliefs that frame accounts of risks. When applying this idea to the coexistence debate, coexistence could be understood against the background of these various different risk frames identified in Chapter four.

In 2003 coexistence became the top issue in the biotech scene and actors were forced to acknowledge this being a legitimate issue for consideration. However, as seen in the narrative, these actors were struggling to promote very different definitions of what they considered coexistence to be all about. The advocates of belief system two “alternatives instead of risks” posed coexistence as yet another risk issue. The specter of “creeping contamination” in the field and the market is understood as an environmental, societal and an ethical risk issue. Any gene transfer is considered as harmful, irrespective of its quality and quantity. In contrast to this, the advocates of belief system one “innovation and Standort” interpret coexistence as a mere economic issue. Once GMOs are approved as safe, so they argue, the problem of separation can be solved by thresholds, individual farmer's arrangements and management solutions. In stressing the point of “manageability” the risk framing of “contamination” was thus undermined. In fact, in this coalition there is no talk of “contamination” but only of “admixtures”, giving proof of the strategic use of language in the struggle between the coalitions. In a similar vein, according to the risk precaution rationale, GMO critics understood that the EU Directive could be used as a legal basis to introduce new regulation, while the biotech proponents strongly rejected this proposal. The coexistence debate therefore still features different accounts of uncertainty and ideas about social order, pointing to a deeper conflict about core issues.

### **Coalition building In times of coexistence**

When looking at the subsystem in the time period considered above, one can find new groups and alliances. There was on the one hand the “Warenkette” initiative, a big group of various different actors supporting the pro-biotech stance, while on the other hand there

was the 'round table' initiative, a mixture of various different biotech critical actors.

According to the ACF, coalitions are made up of actors that share core beliefs and engage in common activities. In the case of the two initiatives it can rightly be said that actors engaged in common activities, however, with respect to sharing core beliefs, the case may be a little more difficult. For sure, some of the actors present in these initiatives were considered part of advocacy coalitions in Chapter four, for instance, industry groups or Friends of the Earth Germany. Yet, looking at the "Warenkette" initiative, one can see that the Labour Union for the Food and Restaurant Sector (NGG), and even the retail sector supported biotech-friendly statements that were released during and after the *Diskurs*, groups that were not part of the pro-biotech coalition before.

Some other cases of initiative-supporters are maybe even more puzzling. In the 1990s the National Farmer's Organization (DBV) was not part of the advocacy coalition "innovation and Standort", yet it could be counted as having been sympathetic to its goals. In 2003 the DBV openly supported the "Warenkette" initiative, but at the same time issued a common statement with the Nature Conservation Agency, an institution known for its opposition to agro-biotech. The Labour Union for Construction, Agriculture and Environment (IG BAU), another example, even appeared as a supporter on both sides, the "Warenkette" initiative *and* the 'round table' initiative. Did all these actors and groups change their core beliefs when they joined the respective initiatives? How can they act in seemingly contradictory ways? Or would it make more sense to speak of pragmatic, incidental, or even strategic alliances that are discursively constructed, and that possibly "respond to simplified story-lines that symbolically reflect the concerns of core beliefs" (Fischer 2003: 102)? Is joining a coalition more a matter of engaging in different social practices, such as cultivation, retail, environmental protection or similar, rather than a matter of core belief compliance? There is significant evidence that the latter assumptions may offer a more insightful explanation for coalition building than the restrictive belief system model of the ACF.

## **Coexistence as the basis for compromise between belief systems?!**

As shown in the narrative, at the beginning of the coexistence debate there was a clear division between the two advocacy coalitions. For advocacy coalition "innovation and Standort" coexistence was "no problem", while for the biotech critics coexistence was another risk issue and hence unacceptable. However, in the wake of the debate coexistence came to be posed as the ultimate fair compromise between the antagonists, as it seeks to ensure both the freedom of choice to produce GMOs as well as to guarantee the freedom to reject GM crops. Having learnt that coexistence has become another regulatory aspect, which needs to be considered for the sake of public acceptance, GMO advocates have incorporated a 'light variant' of coexistence regulation into their belief system (e.g. field research into the feasibility of coexistence). For the organic farmers and consumer organizations, coexistence meant at least a need for stringent rules to protect conventional and organic farming or to keep certain natural areas relatively free from GMOs. They came to accept coexistence and "pseudo choice", and considered the negotiation and technical discussions about concrete measures and obligations a feasible way out of the dilemma. The environmental NGOs original stance was "coexistence is impossible", finally, however, they accepted the coexistence frame. In a manner consistent with their core beliefs, they were eager to shape the rules and regulations in ways that would deter cultivation or the use of GM products (that is, by demanding zero tolerance, strict liability regulation or entirely GMO-free areas). Thus they accepted the debate on coexistence not because they had changed their core beliefs, but because they saw it as another way to prevent or restrict GMOs. From the point of view of belief systems, coalitions facing external challenges find ways to adapt to them. Coexistence means such a challenge/opportunity to the belief systems of both advocacy coalitions, but this does not amount to changes of policy core beliefs, it only affects secondary aspects and strategies.

## **Between 'red' promotion and 'green' protection – policy beliefs and learning in the new GenTG**

Could using the ACF give some more insight into the negotiations leading to the new GenTG (assuming the coalitions acting are actually advocacy coalitions)? Written against the background of precautionary consumer protection, the original BMVEL proposal showed strong precautionary features. As a novelty, precaution was applied not only in cases of environmental and health issues, but was extended to the area of coexistence regulation. The BMVEL proposal thus featured relatively strong beliefs of belief system two "risks therefore alternatives". The SPD Party pro-GM faction of the government would at first not support this exclusively 'safety-based approach' and pressed for a reinsertion of elements of the pro-GM belief system one. As a consequence, the compromise draft version from May 2004 reintroduced the policy belief of "biotech is useful and should hence be developed" by reinserting the biotech promotion purpose into article one. Furthermore, the compromise version omitted the reference to the PP in risk assessment, curtailed information rights and, in the later version approved by the Bundestag, took away the veto power from the BfN.

Looking at the compromise version one can see that concessions between belief system one and belief system two were mainly made in the area of environmental risk assessment. The area of coexistence and liability regulation, in contrast, was even strengthened. How can this be explained? Part of the explanation can surely be attributed to an 'external event'. The strong election result for the Greens in 2002 shifted the power balance within the coalition government even more in favour of the minor coalition partner, obliging the Social Democrats to accept strong policy core beliefs of belief system two. In major contrast to 1998, these policy beliefs were not just put there as an adjunct to social democratic visions, rather they were marking an overall new approach in agro-biotech regulation. This, in turn, has further weakened the pro-GMO faction in the SPD Party.

However, equally important may have been policy learning in the face of a continued antagonistic policy situation. The pro-GMO SPD Party learned to acknowledge that

meaningful coexistence regulation was necessary to protect their core values, that is, keeping biotech as an agricultural option. Based on a similar insight, they have learned to accept institutional frameworks that incorporate different expert opinions (e.g. in the ZKBS). The Greens, in turn learned that their policy core belief of protecting the environment may be equally well served by insisting on strong coexistence regulation (so they gave in on environmental risk issues), and that a compromise was only possible in case they accepted aspects of the opponent's beliefs, that is, the biotech promotion rationale as *secondary aspect of the programme*<sup>171</sup> (one could also speak of "strategic retreat").

On the basis of these results, one could conclude that coexistence regulation, in terms of "providing the opportunity to produce food and feed with conventional, organic and as well as biotechnological forms of production", did provide an opportunity to supercede intense conflict between the different belief systems and to come to an agreement. Both members of coalitions have learned from their conflict and made concessions on secondary aspects of their belief system, but both sides can equally claim to have protected their values and clientele. Irrespective of these compromises, both advocacy coalitions can then go on and support either the building of GMO-free zones or the investment in biotech R & D.

Coexistence as an ambiguous (discursive!) concept did not lead to belief system convergence, as fundamental disagreement persists, yet it could help in overcoming the deadlock between the governing parties and bring about policy change. Whether this is the end to the story (meaning policy closure) remains to be seen. For the ACF a lot will depend on how the new legal concepts are being applied and reworked in the context of administrative practice, and whose belief systems are best served in the practical context.

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<sup>171</sup> In fact, the promotion rationale was taken up on the precondition of precaution.

## Conclusion

In the final narrative it was asked: how do new institutions and new regulation take account of these new issues? How does the new coexistence debate develop between the coalitions and what does coexistence mean for the developments in policy and the possibility of conflict solution? The following conclusion can be presented.

Hajer's concepts of "discourse structuration" could be well applied to the case study as coexistence had reached a state whereby it was too important to be ignored. Coexistence meant a shift in key terms, practices and actors. Yet far from being a 'set concept', coexistence was based on many different, partly competing story-lines. In this way many, including new actors could relate to it, with the effect of widening the spectrum of supporters on both sides of the divide. Coexistence thus brought about *changes to the composition of discourse coalitions*. However the most important discursive effect could be seen in the fact that by highlighting new risks, coexistence strengthened the basis of the GMO critical discourse coalition. Story-lines such as "safeguarding the alternatives in agriculture" and "the war in the villages" meant that the GMO critical discourse coalition *gained powerful external support* on the basis of economic and neighbourhood interests. This brought them onto the argumentative and political offensive and provided the grounds for strict coexistence and liability regulation in new biotech legislation. With the institutionalization of new expertise and coexistence regulation - in the BMVEL, the BFN and the new GenTG - one could even speak of "discourse institutionalization". For Hajer, this institutionalization of discourse clearly stands for policy change. Integrating different interests into the system does not necessarily mean the end of the conflict. Yet by incorporating more views, it may provide better means to deal with the different issues at stake surrounding agricultural and food systems. For the DCF it is discourses which made these remarkable results possible, as changes may be best understood as the product of a new discourse coalition that gained influence because new and important actors could relate to it.



The idea of the ACF that belief systems underlie coalition's policy-related actions could offer an explanation for the multiple frames of coexistence in the narrative. Against the background of various different risk frames, coalitions were struggling to promote very different definitions of what they found coexistence to be all about - yet another risk issue or merely an economic issue. Thus far from being a conflict about technical issues, the coexistence debate points to a *deeper conflict about core issues*. Looking at the subsystem, new groups and alliances appeared, especially the rather pro-biotech "Warenkette" initiative, and the biotech critical 'round table' initiative. The actors in those groups engaged in common activities, yet they did not fully share core beliefs. In the case considered, it was rather a common understanding of the problem and the solutions, somewhat independent of the ultimate motivation (economic interests, values), that brought actors together to form effective coalitions. Why has coexistence become such a powerful critical issue? The ACF again argues with *power shifts in relation between coalitions* (elections), which changed the 'opportunity structure' for implementing policy ideas (coexistence = risk issue) of the minority coalition. The demand for coexistence as a policy goal put pressure on all beliefs systems and coalitions attempted to adjust to it in ways consistent with their values. This implied learning effects in terms of concessions to secondary aspects and "strategic retreats". Coexistence as an ambiguous concept did not lead to belief system convergence, but it facilitated a way to find a practical compromise between the coalitions and to bring about policy change. That it is language (discourse) that ultimately helped in mediating relationships between coalitions, is something that the ACF cannot accommodate. Therefore, from the ACF point of view, policy change can only be understood as the result of external events, learning and strategic behaviour.

## CHAPTER NINE

### 9. Conclusion

This thesis concerned the question of the policy shift with regard to agricultural biotechnology as it developed in Germany between the years 2000 and 2004. The task was to analyze the way in which the shock of the BSE crisis and the subsequent change in agricultural policies impacted on the agro-biotechnology policies of the country, that is, to analyze why and how the crisis affected regulation and whether it led to the institutionalization of new types of socio-political practices and relationships.

To fulfill this purpose the thesis used cognitive-normative frameworks and discussed the role of beliefs and discourse on the German example of policy change in the field of agro-biotechnology regulation. Using Maarten Hajer's discourse coalition framework (DCF) and Paul Sabatier's advocacy coalition framework (ACF), the thesis addressed the question of how can policy change be explained and illuminated by these two theories? What are their relative or different contributions - as two *different* cognitive and normative frameworks - to the study of policy processes and outcomes? Related to these main questions, the thesis addressed the sub-questions: Do the approaches contradict or complement one another and what are their strengths and limitations?

It can be concluded that, over the years, a great deal has changed in German agricultural biotechnology policy, concerning legislation, the political institutions and the actors involved in the subsystem. The cognitive normative frameworks applied have proven to be different, but useful tools in explaining and illuminating this process of transformation. In contrast to the 1990s, when Germany was spearheading the development of biotechnology in Europe, by the year 2004 the country had proposed tough GMO legislation, to date unique in the European Union, challenging some of the dominant scientific, economic and political interests in the country. Most importantly, it could be shown that this was to a large extent the consequence of the highly symbolic and

materially damaging BSE crisis of the year 2000 which, in the distinct German context, had unleashed specific dynamics that paved this way to policy change.

### **9.1 Summary of findings - the theories explanatory powers**

Hajer's DCF and Sabatier's ACF were used in order to explain the dynamics of policy change. In Chapters four to eight, central features of their approaches were evaluated by using them on specific empirical/historical material. Chapter-wise, general aspects of how both approaches work and claim to explain the policy process, from a discourse analytical and a belief system point of view respectively could be highlighted. What can be concluded about the usefulness of the main concepts of both authors?

#### **The basis of coalitions: beliefs or discourses?**

The thesis tested both concepts of coalition building, yet found that Hajer's concept of discourse coalitions worked better as an explanation. As the narrative showed, coalitions were built on the grounds of *multiple* motivations, be they environmental protection beliefs or economic interests of farmers. In fact, it was argued that it is because of this flexibility and ability to accommodate different interests and values within a *discourse* based coalition ("safeguarding the alternatives in agriculture") that powerful effective alliances could be built and the balance of power could be tipped in favour of GM critical groups.

#### **The role of language: means, meaning or power?**

In the analysis considerable plausibility was found for Hajer's central idea that language is more than a system of naming or signification but constitutive of reality ("the nature of the policy problem"), and a possible source of power. This could be convincingly illustrated in the case study: Before the BSE crisis, Germany's GM crop policies were predominantly driven by a neo-liberal framing of innovation and "Standort" and regulation was based entirely on a science rationale, that is, on evidence of environmental risks and safety. Post BSE, GM crop policy became part of a wider debate on sustainable food production and new agricultural practices. Regulation could no longer be seen as a 'merely' scientific

issue, different (perceptions of) risks could no longer be denied and new actors' views gained legitimacy in the course of the debate. Overall, what had previously been an issue for technology policy became one for agricultural policy and diversity in the food system. By changing the subject matter entirely through the use of new language, discourse not only conveyed (new) meaning, but also power to those who had previously been marginalized in the subsystem. This important aspect of the story could be very well illustrated by Hajer's discourse analytical framework. For the ACF language conveys beliefs and is a means for articulation and persuasion, but it is not understood as being essential for problem perception, let alone problem constitution.

### **The role of knowledge and expertise: enlightenment or resource?**

The analysis applied the different approaches' ideas about the role and functioning of knowledge and expertise in the policy process. Confirming Hajer's ideas, it could show that the use of knowledge and expertise was tied up with power-related practices, for example by insulating the dominant discourse coalition from "un-scientific" claims, as was the case during the 1990s. Alternative discourses, for example on different agricultural practices, were expressed through counter-expertise, yet these only became legitimate claims (and eventually established) in the policy process as a result of the new "Agrarwende" discourse. Therefore, Hajer's constructivist understanding of the science-politics interface was useful and illuminating for the policy analysis. There was little evidence found of the "enlightenment function" of science in policy-making, expertise as standing above beliefs, a central claim of Sabatier's approach. Rather than research or empirical evidence, it was found that the discourse of "Agrarwende" altered actor's perception of the biotech policy problem after BSE. In a similar vein, the *Diskurs grüne Gentechnik*, an example of an 'expert-based', but highly politicized forum where 'facts', 'science' and interest became inseparable posed difficulties for the ACF, as it can hardly accommodate such a dynamic or explain the results of the deliberations at the *Diskurs* (only when using a concept of belief-guided discursive interaction). Again it was found that

in case of the role and functioning of 'science' in the German policy process, Hajer's concepts were more useful.

### **The role of policy learning?**

Despite this criticism of the ACF, the analysis could make good use of the idea of policy learning advanced by Sabatier. The assumption that coalitions are motivated by their desire to realize their political goals and thus adapt to challenges and opportunities could be well applied. As learning is instrumental in the ACF, it could be shown that coalitions learned all kinds of things to adapt to new situations. They learned to take up a specific language (for example, "sustainability" or "innovation") to make their beliefs more defensible. They incorporated elements of other belief systems into their own, for example new coexistence requirements (on the level of secondary aspects) and they learned to make "strategic retreats", as seen in the case of the "Chancellor Initiative" or in the legislative brokering situation between the Greens and the SPD Party. At the level of explaining coalitions' behaviour and their reactions to both opportunities for and constraints on belief system realization (and unintended effects/spin-offs thereof), the ACF proved to be useful. Hajer's understanding of learning is different, being less focused on the rational, instrumental level. Instead, learning is the result of 'quality deliberation', which changes cognitive patterns (or interests) and 'the way things are looked at' - an idea applied in the case of the *Diskurs*. However, implicitly, the DCF seems to share an instrumental model of policy learning somewhat similar to the ACF in the concept of 'argumentative strategies', that is, the conscious change in discourse in order to reach specific goals, such as accommodation of various beliefs, positioning, promotion etc. Minister Künast's propositions could be well interpreted along these lines.

### **The role of new actors (inside/outside subsystems/coalitions)**

The role of new actors inside or outside the subsystem was found to be an important dimension in the explanation of policy change. It could be shown that the change in discourse had a powerful effect on the policy subsystem. With a redefinition of the

problem, from technology over food to agriculture, the actors and groups affected by a policy decision changed which could, in turn, strengthen one coalition over the other. This DCF hypothesis could be forcefully confirmed. The ACF assumes that new subsystems may emerge when new issues gain importance yet does not offer a convincing way of looking into these mechanisms more closely. It is not really clear how new actors get drawn into the debate (other than that they are somehow affected) or how stable policy preferences of actors who have not previously been involved in the policy issue, get established in the first place. New actors may have their worldviews and interests but do not (necessarily) have established or strong policy core beliefs. In such case of uncertainty, it was argued, following Hajer, that a lot depends on how issues are discursively anchored (e.g. whether gene-flow is referred to as "contamination" = problem/dangerous or "admixture" = no problem/harmless) and which practices - science, agriculture or environment - are affected as a result. This, of course, relativizes one of the central claims of the ACF, namely that policy change is a process driven by actors that have their clearly defined value preferences.

### **The question of power: traditional versus post-modern understanding**

The analysis could make good use of the two different understandings of power as advanced by the two theories. Hajer's understanding of the "microphysics of power" as working through discourses by positioning actors, assigning blame, responsibility, authority (e.g. through science) turned out to be particularly interesting and illuminating. Yet, there was also critical evidence found for Sabatier's more traditional understanding of power as a resource or institutional authorization. The change in power relationships as a result of the elections was a *necessary* but not a sufficient cause for change. The more dramatic effects only occurred later after BSE and were a product of discursive interaction. Altogether the case study revealed a very complex and dynamic web of power relations, mainly as a result of the application of the DCF.

## **The formation of interests: given or discourse dependent**

As a major claim, the DCF proposes that interests are not given but subject to discourse. In fact, the analysis could find some critical evidence for this idea, for instance with respect to economic interests, when in the late 1990s retailers realized through the “consumer choice” discourse that it was in their best economic interest to adopt a critical stance towards GMOs as the majority of consumers seemed to strongly object to agro-biotech. In the same vein, when the debate turned towards the “Agrarwende” and the “safeguarding of alternatives” farmers realized that it was in their best interest to opt for more regulation as otherwise their daily practices and economic basis could be threatened. As shown in Chapter two the ACF framework is not very explicit on the relationship between beliefs and interests, one assumes that political and economic interests either follow from beliefs or that material interests have nothing to do with beliefs. The ACF can only understand these dynamics through changes in the belief system, that is, mainly through changes in secondary aspects. As these changes are only minor, the ACF is thus unable to explain how such dynamics could become important elements causal for *major* policy change.

## **The cause/basis of policy change?**

When considering the two main arguments proposed for policy change, discourse on the one hand and beliefs/external events on the other, it can be concluded that both offer a different way of looking at the process of change. To recall, the DCF pointed to the structure of the discursive field and the “Agrarwende” as a powerful response to the BSE crisis because it “fit” the situation, was multi-interpretable and created new situations of trust. For the biotech subsystem this had the effect that the “Agrarwende” radically restructured the field of arguments, that it repositioned actors and changed the composition and political standing of discourse coalitions, which altogether opened the way for policy change.

The ACF argued instead with external events, policy learning and the change of power relations between coalitions. Here election results and institutional factors played a greater role. The ACF interprets BSE as an 'opportunity structure' (yet why it becomes such an opportunity is not entirely clear), as it undermined public support for the majority coalition and provided a "window of opportunity" for the minority coalition to undermine or promote specific beliefs. In the wake of the policy process belief systems are revised, yet only on the level of secondary aspects (content of revisions is also hard to explain for ACF). Major policy change is thus not the result of changed core beliefs of an advocacy coalition but of changed power constellations, coincidences and opportunities and finally strategic behaviour.

Comparing these two approaches to policy change in this thesis, it was found that the DCF offered a more interesting and illuminating theoretical framework than the ACF. Being more complex in its interpretative logic, it is better able to explain the dynamics, to generate novel insights and to deal with the subtleties, the 'twists and turns' of the case study. Nevertheless, the ACF offered some useful contributions to the analysis. Thus in conclusion it can be reasonably argued that in order to understand the impact of the BSE crisis on agro-biotech policy, it is useful to consider elements of both approaches, for instance, of discursive mechanisms, of ideas of how an agency reacts to opportunities and constraints, and of some concept of power that goes beyond discourse.

As the BSE case has shown, it is *specific constellations* that offer the potential for the use of new language to challenge dominant discourses. BSE, as a key event, provided such an opportunity for inserting new discursive categories into public policy and practices and to trigger a considerable change process in terms of problem perception, stakeholder (inter)action and proposed regulation. The "Agrarwende" discourse was successful because of the very specific circumstances at the time: a) BSE as a political, economic and cultural rupture, bringing together various discursive domains, b) the ability and willingness of a political elite for fundamental reforms, and c) the new 'choice' discourse as a 'catch-all' concept, forming a symbolically appealing and politically acceptable reply,



d) actors use of specific discourses to build alliances, that is to accommodate various interests and beliefs, and to promote their policy preferences and e) the change of themes and interests as a result of the new discourse.

These combined circumstances and their specific mutually influential and reinforcing dynamic all played a role in explaining why the BSE crisis had the effects described on the biotech policy of the country. This, again, relativizes central aspects of both approaches. It shows that the change process cannot be understood without taking into account power resources other than discourse, at the same time as the developments cannot be understood on the grounds of the idea that BSE was about some objective, measurable facts and the changes the result of conscious, instrumental behaviour.

## **9.2 Strengths and weaknesses of the approaches**

Both approaches contributed to an understanding of the policy process and the process of change. Unsurprisingly, Hajer and Sabatier's different theoretical angles illuminated or black-boxed different aspects of the story and offered different kinds of explanations for the events. Hajer's concepts were, however, found to have more strengths and fewer weaknesses than Sabatier's. To give a final account of strengths and weaknesses of the two approaches, the following can be said:

### **The discourse coalition framework (DCF)**

#### **Strengths**

- DCF represents a very useful tool to describe discourses, their changes, breaks and adaptations. This way it offers a very rich, innovative and sensitive means to understand the effects of language and representation by way of detailed examination of discursive relationships, contexts and micro-structures.
- Due to the constructivist understanding of science, DCF gives a more insightful and accurate explanation of the science-policy interface. Knowledge plays a fundamental role in the policy struggle, however, knowledge does not develop and unfold in a

discourse, respectively belief system free environment. This central idea is forcefully pushed by the DCF.

- DCF offers a tool to understand argumentative activity or discourse as an *independent* power practice, which is much more complex than a rational choice analysis suggests (for example a strategic discourse which unintentionally strengthens the opposition, the choice of language and its effects on interest positions, the manipulative potential of certain language use).
- DCF alludes to the time/space contingent yet not arbitrary character of policy change. As the analysis showed the time and space constellations surrounding the BSE crisis and the development of agro-biotech were significant.

### **Weaknesses**

- Actor's positions seem to show more resistance and are thus less manipulative than Hajer suggests. There is evidence that the different groups seek to protect some deeper values, that they act on the basis of deeper convictions and react to beliefs.
- DCF needs to incorporate other, non-discourse bases of power. What will finally be relevant in the policy formulation process is a matter of relative power of actors in the policy subsystem. Power constellations can change through discourse but there is a need to better incorporate the institutional dimension or political-economic dynamics (after all, in the case described counter-discourses were mainly won with liberal and economic arguments, such as consumer/producer rights, diversity of markets. Also changes could correspond to real shifts in the economy).
- Similarly, discourse reflects societal structures of power and can enshrine entrenched positions ("sound science"), but it also has the power to change them ("Agrarwende"). DCF alone cannot understand when and how dominant economic and political interests can be challenged.

## The belief system approach (ACF)

### Strengths

- Sabatier's notion that policies articulate social agendas beyond the stated objectives in the specific area of concern (visions of nature, democracy or the market), allows one to understand the persistence of specific (*discursive*) structures and the defence mechanisms kicking in once belief systems are under stress. Yet whether this is ultimately evidence of beliefs or of the strength of discursive patterns and practices remains difficult to know. The ACF does not provide a rigorous method to make that distinction.
- The focus on a belief system consisting of a hard core and more readily changeable secondary aspects, in combination with the learning approach, allows a more in-depth understanding of the process of change by illuminating which particular aspects have changed.
- The idea of stable belief systems enables one to trace representation or discourse more clearly back to an agency: What actors/policy makers do is instrumental in terms of realizing beliefs, reality is constructed so as to impose a specific understanding of a problem and to fit policy beliefs, the *stories* people tell are guided by their beliefs.
- ACF takes more explicitly into account the role and power effects of institutions.

### Weaknesses

- The ACF greatly underestimates argumentative exchange and the process of reality construction. For instance, how language can help forge alliances and help in bringing about policy change by building on ambiguous concepts (coexistence), how language can be used as a powerful strategic instrument in the policy process (in terms of confronting people on their own turf by employing their arguments or by framing things as so to appeal to specific belief systems); more importantly, how language can change the meaning of 'things' and events and how language can be decisive when policy beliefs are not established. Finally there is a lack of understanding of how

language use can have power-effects that are beyond the categories, institutions and resources, offered by the ACF.

- There is a lack of understanding of how *belief guided interactions*, for example the strategic use of language, can trigger situations which are beyond the conditions that gave rise to it.
- ACF does not understand how policy core beliefs become established in the first place. Does a positive attitude towards new technologies necessarily imply that biotechnology is embraced? The study suggests that this is not necessarily the case.
- The ACF overestimates the effects of 'shocks' or external events. External events do not have objective impacts but are themselves mediated through beliefs, discourses and institutions.
- As argued and shown in many instances during the case study, the role and nature of science and expertise in the policy process is poorly understood if not misleading.
- ACF does speak of political-economic factors, but Sabatier fails to clearly link these to his framework (other than as external factors or material interests).

### **9.3 Are these theories contradictory or complementary?**

The theories drew our attention to different aspects of the case study or offered different explanations for the same event. Looking at the conclusions above, it could be said that the two approaches could in some respects be used in a complementary fashion. As the narrative and analysis showed, discourse, belief system and institutional dynamics were highly intertwined. Commitments made actors talk the way they did, at the same time as talk itself could create new insights and commitments, as well as being shaped by institutional factors. In this study on agro-biotech policy change in Germany, these interrelationships could be very well shown: Discourse could create new meanings and alter cognitive patterns ("Agrarwende"), but the process was highly contingent. There was the momentum of institutional power to consider and value positions seemed to show considerable resistance (central policy beliefs of coalitions remained unchanged). Nevertheless, major policy change occurred and discourse could eventually trigger

dynamics that were beyond the conditions/beliefs that gave rise to it. In bringing out these different dynamics in the policy process described, the analysis could draw upon the key concepts of each of the authors, partly by reading them through the eyes of the other.

This is not to say that, in general, one approach's strength is the other's weakness, and that one could be simply used as a refinement to the other. As mentioned and discussed in Chapter two, both approaches come from very different theory traditions. In Hajer's approach one faces a theoretical body that is radical constructivist. All the traditional ideas of actors, institutions, interests or power become radically questioned as everything is 'in flux' and becomes subject to argumentation. Sabatier's approach remains selective and limited, and is, in that respect, somewhat arbitrary in its interpretative scope. This central division comes out most clearly on the question of science and the role of expertise in both frameworks. In these accounts both frameworks are clearly contradictory in their assumptions and their predictions concerning policy development and change. Equally, the insistence on either beliefs or discourses (the DCF does speak of beliefs but does not say what these are in contrast to discourses, the ACF does not mention discourse), the idea that value positions are either fixed or changeable in the policy process indicates a fundamental incompatibility.

Does policy change rather occur on the basis of discourse or on the basis of belief systems? Is change due to changing normative commitments or communicative practices? No clear answer appears in this respect from the study, as there is evidence for both. Values certainly play a great role in the policy process on agro-biotechnology but not necessarily only along the lines Sabatier predicts. Equally, discourses are essential, but these are not necessarily detached from values and they do not always have such great effects. In any case by focusing on beliefs and discourses, it was possible to get a strong sense of the interaction and the process-like character of policy continuity and change, but certainly this is far from being the whole picture. As the analysis showed, the 'reality' of the policy-making process is highly complex, as social action and structural conditions operate on a variety of scales. In this sense it may be useful to understand beliefs and

discourse as “distinctive moments” (Harvey 1996: 78) to the social process, next to institutions, social material practices, and relations, and forms of political-economic power. It is both interesting and very useful to focus on the interrelationship between discourse and beliefs, but more efforts could be made in order to find a more comprehensive and integrative way to understand the complexity of contemporary policy-making.

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## ANNEXES

### Annex 1: Hypotheses (taken from Sabatier 1998)

1. (revised) On major controversies within a *mature* policy subsystem when policy core beliefs are in dispute, the line-up of allies and opponents tends to be stable over a decade or so.
2. Actors within an advocacy coalition will show substantial consensus on issues pertaining to the policy core, although less so on secondary aspects
3. An actor (or coalition) will give up secondary aspects of his (its) belief system before acknowledging weaknesses in the policy core.
4. (revised in 1993) The policy core attributes of a governmental program in a specific jurisdiction will not be significantly revised as long as the subsystem advocacy coalition that instituted the program remains in power within that jurisdiction- except when the change is imposed by a hierarchically superior jurisdiction.
5. (1997) Significant perturbations external to the subsystem (e.g. changes in socio-economic conditions, public opinion, system-wide governing coalitions, or policy outputs from other subsystems) are a necessary, but not sufficient, cause of change in the policy core attributes of a governmental program.
6. Policy oriented learning across belief systems is most likely when there is an intermediate level of informed conflict between the coalitions. This requires that: a) Each has the technical resources to engage in such a debate; and that b) The conflict be between secondary aspects of one belief system and core elements of the other or, alternatively, between important secondary aspects of the two belief systems.
7. Problems for which accepted quantitative data and theory exist are more conducive to policy oriented learning across belief systems than those in which data and theory are generally qualitative, quite subjective, or altogether lacking.
8. Problems involving natural systems are more conducive to policy-oriented learning across belief systems than those involving purely social and political systems because in the former many of the critical variables are not themselves active strategists and because controlled experimentation is more feasible.
9. Policy-oriented learning across belief systems is most likely when there is a forum which is: a) Prestigious enough to force professionals from different coalitions to participate, and b) Dominated by professional norms.
10. (new in 1993): Elites of purposive groups are more constrained in their expression of beliefs and policy positions than elites from material groups.
11. (new in 1993): Within a coalition, administrative agencies will usually advocate more moderate positions than their interest group allies.
12. (new in 1993): Even when the accumulation of technical information does not change the views of the opposing coalition, it can have important impacts on policy – at least in the short run – by altering the views of policy brokers.

## **Annex 2: Interviews**

Ministry of Health and Social Affairs (BMGS), Bonn (11.06.02)  
Federal Environmental Agency (UBA), Berlin (14.06.02)  
Federal Consumer Protection Agency (vzbv), Berlin (17.06.02)  
Greenpeace Germany, Hamburg (09.07.02)  
Union for Food Industry (NGG) Hamburg (09.07.02)  
German Biotechnology Association (DIB), Frankfurt (11.07.02)  
Association of organic farming (AGÖL), Lengfeld (11.07.02)  
Friends of the Earth, Germany (BUND), München (14.12.02)  
Competent Authority of Surveillance of the Genetic Engineering Act for Baden  
Württemberg (Regierungspräsidium), Tübingen (28.11.02)  
Federal Ministry for Consumer Protection, Food and Agriculture (BMVEL), Bonn  
(02.06.03)  
Federal Biological Research Centre for Agriculture and Forestry (BBA),  
Braunschweig (04.06.03)  
Robert-Koch Institute, Berlin (05.06.03)  
Green parliamentary party, German Federal Parliament, Berlin (6.6.03)  
Foundation on Future Farming (ZsL), Berlin (06.06.03)  
Bayer Crop Science, Frankfurt (13.6.03)  
TransGen (Phone interview 18.06.03)  
EU Commission, DG Environment, Brussels (09.07.03)  
Federal Agency for Nature Conservation (BfN), Bonn (20.10.03)  
German Representative of Ecoropa, Bonn (20.10.03)  
German Federation Food Law and Food Science (BLL), Bonn (21.10.03)  
Gen-ethisches Netzwerk (Biotechnology-critical NGO), Berlin (23.10.03)  
National Association of German Retail Industry (BVL), Berlin (24.10.03)  
Research Institute for Organic Farming (FibL), Frankfurt (27.10.03)  
National farmer's organization (DBV) (Written response to interview questions,  
26.11.03)

### **Annex 3: Participating groups at the *Diskurs grüne Gentechnik***

Arbeitsgemeinschaft Bäuerliche Landwirtschaft  
*Association of small-scale farmers*

Arbeitsgemeinschaft Ökologischer Landbau e.V.  
*Association of organic farming*

Bioland e.V.- Bundesverband  
*(Organic certifier)*

Bund für Lebensmittelrecht und Lebensmittelkunde e.V.  
*German Federation Food Law and Food Science*

Bundesfachverband Deutscher Reformhäuser e.V.  
*Federal Association of German Health Food stores*

Bundesverband des Deutschen Groß- und Außenhandels e.V.  
*Federal Association of Wholesalers and Import/Export Firms*

Bundesverband des Deutschen Lebensmittelhandels e.V.  
*Federal Association of the German Retail Industry*

Bundesverband Deutscher Pflanzenzüchter e.V.  
*Federal association of German Plant breeders*

Bundesvereinigung der deutschen Ernährungsindustrie e.V.  
*Federal Association for the German Food Industry*

Dachverband wissenschaftlicher Gesellschaften der Agrar-, Forst-,  
Ernährungs-, Veterinär- und Umweltforschung e.V.  
*Umbrella organisation for the science associations in agricultural, forest,  
food and environmental research*

Deutsche Bischofskonferenz  
*German Bishop's conference*

Deutsche Forschungsgemeinschaft  
*German Research Society*

Deutsche Gesellschaft für Ernährung e.V.  
*German Nutrition Society*

Deutsche Industrievereinigung Biotechnologie  
*German Biotechnology Association*

Industrieverband Agrar e.V.  
*Association of agricultural companies*

Deutscher Bauernverband e.V.  
*National farmers' organization*

Deutscher Hausfrauen-Bund e.V.  
*German housewives association*

Deutscher Naturschutzring e.V.  
*Umbrella organization for environmental NGOs*

Deutscher Raiffeisenverband e.V.  
*German agricultural supplier's association*

Deutscher Verband Tiernahrung e.V.  
*German animal feed association*

Evangelischer Entwicklungsdienst e.V.  
*Development agency of protestant church*

Gewerkschaft Nahrung-Genuss-Gaststätten  
*Union for the Food and Restaurant Sector*

Greenpeace e.V.

Industriegewerkschaft Bauen-Agrar-Umwelt  
*Union for construction, agriculture and environment*

Industriegewerkschaft Bergbau, Chemie, Energie  
*National Union for Mining, Chemical and energy sector (IG BCE)*

Katholische Zentralstelle für Entwicklungshilfe e.V.  
*Development agency of Catholic Church*

Rat der Evangelischen Kirche in Deutschland  
*German Council of Protestant Church*

Verband Deutscher Oelmühlen e.V.  
*Federal association of German oilmillers*

Verbraucher Initiative e.V.  
*Consumer protection NGO*

Verbraucherzentrale Bundesverband e.V.  
*Federal Consumer Protection Agency*